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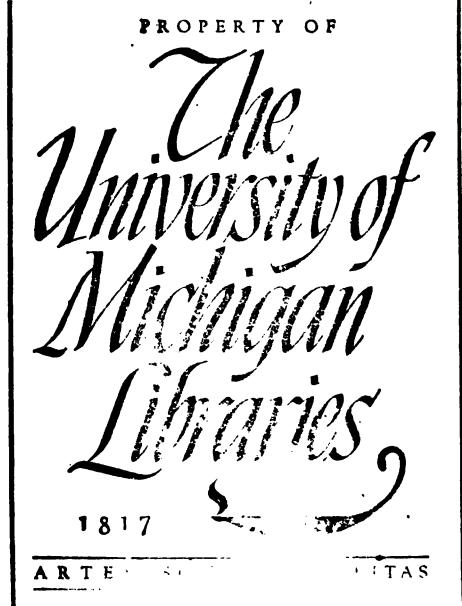
# LIGHTHOUSES



OF THE WORLD.

4/-

Michigan



Highland

B. C. Hard

Ship. Blackadder

Apt. Grassam

21 Bankbook Stas

Bankbook Rd.

Elwood

East

England

EW 70  
Front + rear

TRB 17

10/6

248.440

check





The  
**EDDYSTONE LIGHTHOUSE**

Completed 1759.

*To be replaced by a new building.*

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A

DESCRIPTION AND LIST

OF THE

# LIGHTHOUSES OF THE WORLD.

---

1879.

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NINETEENTH EDITION.

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BY ALEXANDER GEORGE FINDLAY, F.R.G.S.  
*Honorary Member of the Società Geografica Italiana.*

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## P R E F A C E.

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THE Introductory portion of this Book is the substance of two Papers by the Author, read before the Society of Arts on December 15, 1847, and March 3, 1858; which have been published in the Society's Transactions and Journal. It was thought that, by drawing the Sailor's attention to the methods by which the Lights are produced, it would be adding much to their utility, and prove interesting to many.

The varied features of the beautiful Systems in operation are necessarily, from the nature of this Work, very briefly adverted to; and many important topics have not been touched upon for the same reason. The excellent works of ROBERT ALAN, and THOMAS STEVENSON, will furnish the reader with a fund of varied information, and will supply all deficiencies in this, should a further insight be desired.

Besides these works, and others of earlier date, quoted herein, the bulky Reports of the Select Committees of the House of Commons, of 1822, 1834, and 1845, and that of the Royal Commission published in the present year, if they have not advanced the subject of their inquiry, have collected and recorded a vast mass of detail bearing upon almost every relation of the Lighthouse System. Besides these, the Report of the United States' Lighthouse Board, in 1852, the works of Fresnel, and other Engineers of the French Commission, will give an excellent account of the condition and requirements of Lighthouses.

The lists of the Lights which follow have been re-arranged from those published by the Admiralty, which, under the careful superintendence of Commander EDWARD DUNSTERVILLE, R.N., have attained a completeness approaching perfection.

In order that this Work may preserve its utility for several years, by giving the latest information, a SUPPLEMENT, containing the additions and changes that have occurred during the previous year, will be annually forwarded on application as directed.

A. G. F.

*London, July 1, 1861.*

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After the TWELFTH EDITION this book was remodelled, although the information is given on the same plan, and arranged in the same manner, as in those preceding it. But it was thought that the utility of the book might be, in some degree, increased as a work of reference, by giving more particulars of the character and uses of each light.

In the Introductory description of Lighthouses and their illuminating apparatus, those recent improvements, and many other particulars which have been introduced in process of time, will be found alluded to.

*London, January 1, 1879.*



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# PHAROLOGY:

OR,

## A DESCRIPTION OF LIGHTHOUSES,

AND THEIR ILLUMINATION.

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### CHAPTER I.

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#### EARLY HISTORY OF LIGHTHOUSES.

To bring before the sailor's notice the many beautiful adaptations of refined science in operation in Lighthouses,—to explain their principles, and to enable him to distinguish one description of light from another, through a knowledge of its construction, is the object of the present Introduction. These subjects, though of great interest, were but little noticed till within a few years, although they have been brought nearly to the present perfection for a long period.

Amid the wonderful progress which has characterized the last quarter of a century, the Lighthouse system has been one of the foremost. Wherever civilization and commerce have spread, there has the engineer marked its advance by these evidences of his skill; and it seems more than probable that, in the course of a very few years, all the prominent points of the world, interesting to the navigator, wherever his commercial pursuits lead him, will be indicated by day and night by these guardian monitors; while the whole West of Europe is now so well lighted as to very nearly approach perfection. Whether Lighthouses, as now understood, were used in the early periods of history is almost more than doubtful, although there are many allusions in the mystical writings of the ancients to such existing, and conjectures have been formed that Homer has mentioned them. Vague hypothesis has also made the single-eyed Cyclopes into Lighthouses; or even, in a figurative manner, Lighthouses themselves. It is more than probable that the prominent headlands of the Mediterranean were marked, in the very early ages, by beacon lights, to guide the coasting and timid voyagers of these distant ages. It has also been surmised, but without much reason, that the famous Colossus of Rhodes, erected about 300 B.C., was also used as a signal light.

Leaving these dark conjectures, we arrive at a certainty in the history of the famous Pharos of Alexandria, one of the seven wonders of the world. It served as a guide to the ancient mariners during the period of 1,600 years, and its remains are still to be recognized. Pliny says, in his Natural History, that it was built by Sostratus of Cnidus, by command of one of the Ptolemies, about 285 B.C. The cost of it was 800 talents (£243 15s.), or £195,000 English. It was square, of white stone, consisting of many storeys, and diminishing upwards. Its height, according to the authority of the *Geographia Nubiensis*, was 100 statuary of man, or 300 cubits (equal to 20.480 inches), equal to 512 English feet. In the upper chambers were windows looking seawards, and in these chambers torches or fires were burned to guide vessels into the harbour of Alexandria, and we are told by Josephus that these fires were visible at the distance of 300 stadia (or 29½ geographic miles).

This general description is applicable to nearly all Lighthouses down to the year 1811 or 1812. Its name was taken from the little Island of Pharos, on which it was erected, and hence it has been applied to Lighthouses generally, while the term *Pharology* was first introduced by the

*Lighthouses.*

B

late Mr. Purdy to express our modern system. Other Light-towers existed at Ostia, Ravenna, Apamea, and other places, as mentioned by Pliny, Suetonius, and Stephanus Byzantinus.

During the spread of the Roman power, this mighty nation planted these evidences of their nautical skill in their conquered countries. The Lighthouse at Coruna, north-west of Spain, is perhaps the oldest existing tower now used as such. It is believed to have been erected in the reign of Trajan. It was re-established as a Lighthouse in 1634.

In England we have an evidence of the Roman colonization in the Pharos which stands adjoining the ancient church on the highest part of Dover Castle, built prior to A.D. 53. A similar tower (now destroyed) existed on the opposite heights, and was called, from its hardness, "The Devil's Drop of Mortar;" another occupied the height of Boulogne, on the French side. There, perhaps, may have been a Roman Pharos on Flamborough Head, and another one on the coast of Flintshire. The known existence of these and others, and the inferred use of others in our own country, testify that these phari were among the many marks of the high civilization of those early days.

In the mediæval period there are many Lighthouses of which we have some notices, as well as some which still are used as such. They were also frequently, perhaps more generally, a portion of other buildings. Thus, on an angle of the tower of the little church which crowns St. Michael's Mount, in Cornwall, are the remains of a stone lantern, perhaps nearly 500 years old, which is now known as the famous St. Michael's Chair. The Light at St. Elmo's Castle, Malta, has been shown since 1551. The old Skaw Lighthouse, on the North point of Denmark, still standing as signal tower, dates from 1564. The oldest lights now existing on the same sites in Great Britain are those of Lowestoft, since 1609; Winterton and Dungeness, 1615; the North and South Forelands and Orfordness, 1634; the Isle of May, 1635; Portland, Harwich, Flamborough, &c., all in the 17th century; and several others soon after these dates.

All these structures, however, do not differ in their principles from ordinary buildings on land, and were constructed only to show by night the uncertain illumination of a wood or coal fire, or other imperfect mode of lighting. Modern science has replaced all these methods by a very different order of building and apparatus; so that, although the brief description of lights in ancient times, given above, is interesting to the historian, it is only within almost the last century that the true requirements of these monitors have been recognized. As a building, the first structure, as a purely nautical work, was the Cordouan Tower, in the Bay of Biscay; and the next the Eddystone Lighthouse: with these commences the history of modern Lighthouses.

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## CHAPTER II.

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### LIGHTHOUSES AND LIGHTVESSELS.

The famous Cordouan Tower at the mouth of the Gironde, in the Bay of Biscay, is a wonderful monument of skill. This elegant structure, the work of Louis de Foix, was completed in 1611, in the reign of the great Henri IV. of France, and was twenty-six years in building. It is minutely described by Belidor, in his "Architecture Hydraulique." It was 197 feet high, and consisted of successive galleries, enriched with pilasters and friezes. Round the base is a circular building, 134 feet in diameter, in which are the light-keepers' apartments, and which also forms a sort of outwork to break the force of the waves against the main building. The tower itself contains a chapel and numerous apartments, and is ascended by a spiral staircase. It has been modified and adapted to the modern system of lighting; and, after a lapse of more than 250 years, it is considered the finest Lighthouse in the world.

The Eddystone Rock, off Plymouth, has attracted the attention of the public more, perhaps, than any other of our Lighthouse sites; not so much on account of its importance, but as forming an era in the construction of Lighthouses. The first Eddystone Lighthouse was built of wood, 80 feet high to the top of the vane, from Mr. Winstanley's designs, 1696-8. The light

was first shown in November in the latter year, but it was soon found that the sea rose, so as "to bury the lantern under the water," although at the elevation of 60 feet above the rock. It was accordingly raised to 100 feet. In November, 1703, the tower requiring some repairs, Mr. Winstanley went to the Lighthouse to superintend them; but the storm on the 26th of that month carried away the whole erection, and every soul perished. The wreck of the *Winchilsea*, man-of-war, soon after occurred, as if to point out the necessity of a light; but the Trinity House could not obtain the sanction of the Government to commence until July, 1706, when new timber erection was begun by Mr. John Rudyerd. It was subsequently destroyed by fire in 1755. This tower was circular, and 92 feet in height. The tower which exists here at present was erected by Mr. Smeaton, who has given an admirable description of it. The masonry was 76 feet 6 inches, and the top of the lantern 93 feet above the foundation. This noble erection, completed in 1759, stands a monument of fame to its constructor, and a lasting evidence of the correctness of the principles on which it is built. It will be self-evident that the site of this, and similar erections, calls for extraordinary skill and solidity in their construction. They are, therefore, to be viewed as works *sui generis*, and must not be classed with similar buildings on land, removed from the tremendous force of the waves.

Smeaton's description has been so often referred to, that it is scarcely necessary to quote from it here. The various courses are so dovetailed into each other, and the whole secured together, that the tower is really almost as if cut out of a solid block. The immense difficulties which had to be overcome, from the first landing on the rock, on April 5, 1756, to the laying of the first stone, June 12, 1757, and the last, on August 24, 1759, render Smeaton's book one of the most interesting ever written.

The next Lighthouse in our country, of a similar nature, is the equally famous Bell Rock Lighthouse; whose constructor, the late Mr. Robert Stevenson, has also given us a most valuable account of the difficulties to be overcome, and the progress of the works, between its commencement, in August, 1807, and its completion, in October, 1810. It was first illuminated in February, 1811. The tower is 100 feet high, and cost £80,000.

A later, and the most noble erection of this kind, is that on the Skerryvore Rock, off the West coast of Scotland. This, from the designs of Mr. Alan Stevenson, the son of the engineer of the Bell Rock, and the talented engineer to the Scottish Lighthouse Board, cost in its erection, with the harbour for the tender and other necessaries, £87,000, and was first illuminated in 1844.

Another grand Lighthouse of this nature, and also one of the most important in the British list, is that on the Bishop Rock, off Scilly, 145 feet high, built by the late Mr. James Walker, under the superintendence of Mr. H. Douglass, at an expense of £36,500.

The Lighthouse at Carlingford, on the East coast of Ireland, the foundation of which is 12 feet below high water, is an analogous structure, 111 feet in height, though not in such an exposed situation, from the designs of Mr. George Halpin, in 1830.

Another noble and ornamental Lighthouse is on the West coast of France, on the Héaux (or Héaux) de Bréhat. It is nearly as high as the Skerryvore, and is deserving of all admiration.

The Wolf Rock Lighthouse, off the Land's End, Cornwall, is the latest great work of the Trinity House, and both in its structure and its illumination it combines all the refined improvements which have been effected through the talent of its engineer, Mr. James Nicholas Douglass. A survey was made in 1861, and the foundation commenced in March, 1862. In the first season only 83 hours of work could be obtained; and between that and its completion, on July 19, 1869, there were in the eight working seasons 296 landings on the rock, and the time occupied was equal to about 101 working days of 10 hours each. The cost was only £62,726.

The great distinction between the later towers, erected by the Messrs. Douglass and their predecessors, is that the stones of each course are dovetailed together laterally and vertically, so that the use of metal or wooden pins is needless. This method was first used at the Hanois Rock, Guernsey. On the upper face, and at one end of each block, is a dovetailed projection; and on the under face, and at the other end, is a dove-tailed indentation. The upper and under dovetails are made just to fall into each other, and when the hydraulic cement is placed on the surface, it so locks the dovetailing that the stones cannot be separated without breaking. Thus, when this cement is set and hardened, the whole of the base is literally one solid mass of granite. The lower courses for the first 39 feet of the Wolf Rock Lighthouse have fillets on their outer edges, into which the upper course is stepped, and this prevents the action of the waves from penetrating the joint. Of the light apparatus we shall speak presently.

## DESCRIPTION OF LIGHTHOUSES.

It is as difficult to estimate the nautical importance of these triumphs of engineering skill, as it is to calculate the wonderful force of waves that they have to bear against. Mr. Thomas Stevenson, another of that eminent family of Lighthouse engineers, constructed an apparatus, like a railway buffer, that self-registered the force of the waves that struck it, which has been applied to this purpose. In the Atlantic, according to observations made at the Skerryvore Rocks, the average result for five of the summer months, in 1843-4, was 611 lbs. per square foot. The average result for the six winter months of the same year was 2,086 lbs. per square foot, or three times as great as in the summer months. The greatest force registered was on the 29th of March, 1845, during a westerly gale, when a pressure of 6,083 lbs. per square foot was exerted. The next highest was 5,323 lbs.

In the North Sea, at the Bell Rock Lighthouse, the greatest result obtained was 3,013 lbs. per square foot. This lesser force is to be attributed to the narrow space in which the waves have to travel in the North Sea, compared with the roll of the Atlantic. It must, however, be remarked, that it is almost impossible to receive the force unimpaired, as the waves are more or less broken by hidden rocks or shoal ground before they reach the instruments.

Even this tremendous force seems to be far less than that encountered at the Bishop Rock, probably the most exposed Lighthouse in the world. On January 30, 1860, a storm wave shook this tower, and tore away the bell, weighing 3 cwt., from its support at the top of the tower, more than 100 feet above the sea. Mr. Stevenson also has related some extraordinary circumstances of the force of waves at the Shetlands, which demonstrate that their power, if opposed, is almost irresistible. Therefore, if these sea-beaten towers were not, at least, equal in weight to a solid block of granite of 60 or more feet in height, they would not be able to withstand the waves.

The most obvious means to avoid this enormous amount of hydrodynamic force is to reduce the extent exposed to it to the smallest possible limits, so as to offer the least possible resistance. Iron columns have been suggested and used for this purpose. Wood has also been used, as in the Smalls Lighthouse, off Pembroke-shire; but as it is liable to many sources of decay, and particularly to the ravages of the *teredo navalis* when under water, it is not adapted for such structures.

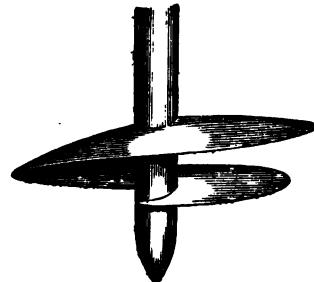
Having stated these difficulties, the description of some of the means employed to overcome them will be better understood. The first to be noticed is the *screw pile* of Mr. Alexander Mitchell, C.E., of Belfast. This principle was first employed in the construction of the foundation of the Maplin Lighthouse, on the North side of the mouth of the Thames, which now exhibits a red light. This was commenced in 1838, and is as firm now as when first erected. It stands on the outer edge of the Maplin Sand, which consists of sand at the surface, and afterwards of sand and mud, exceedingly soft and penetrable, and therefore the erection of a Lighthouse upon such a foundation must be considered as a great achievement.

The principle of the screw-pile Lighthouse is having a series of piles, nine in number, eight in the angles of an octagon, and one in the centre. These piles consist of a shaft of hammered iron, 5 or 6 inches in diameter, having a single turn of the flange of a screw 4 feet in diameter. This pile is screwed with great facility into the sand to the depth of 22 feet, and it was calculated that each of them would bear a weight of 64 tons. These nine piles were fixed in nine consecutive days in the summer of 1838, and upon this foundation of Mr. Mitchell's the light-room was erected, under the direction of Mr. Walker, the engineer to the Trinity Board.

Mr. Robert Stevenson proposed, in 1800, a structure similar to this, for the Bell Rock Lighthouse. It was intended to affix the foundation to the rocks, and that the iron shafts should support several storeys; whereas the Maplin and other Lighthouses have but a single storey.

The screw-pile system has also been adopted for standing Beacons. As far as experience goes, these Lighthouses answer all the purposes required of them, as regards stability, by offering the smallest possible surface to the force of the waves.

These pile Lighthouses have hitherto been placed in the less exposed situations, such as the



Extremity of Mr. Alex. Mitchell's Screw Pile.

Thames Mouth, Morecambe Bay, Belfast, Cork, &c., and have answered all their requirements.



The Maplin Lighthouse, erected by Mr. Walker, upon Mitchell's screw-pile foundation.

upon the Goodwin Sands, on July 16, 1845, and an iron tube of 2 feet 6 inches diameter was driven into the sand to a depth of 22 feet in two or three hours. A gentleman, present at the experiment, which was made by the Trinity Brethren, said, that the facility with which this large tube was made to descend could be compared to nothing better than shutting up a telescope. The method of operation is this:—One of the tubes being placed perpendicularly, an air-tight cap is fixed to the upper end. The cap communicates with a powerful air-pump, by means of which the air is exhausted from the tube, drawing up the sand or shingle with the water which ascends, and the tube immediately descends from the effects of outward atmospheric pressure. The practicability of the scheme being proved, several Beacons, as before stated, were erected as on the Buxey, the Shinglos, the Girdler, the Margate, and other sands lying in the mouth of the Thames.

Another plan has been carried into effect, at the Point of Air Lighthouse, at the entrance of the River Dee, near Chester. This, which is similar in superstructure to the Maplin Lighthouse, consists of nine hollow iron cylinders, 3 feet 9 inches in diameter, sunk 12 feet into the sand by the aid of an instrument known to well sinkers as the "Miser," which extracts the sand contained in the cylinder. In these the bases of the piles are inserted, and then filled with concrete. But this is erected above low water mark.

Another adaptation of iron is the iron Lighthouse, designed by the late Mr. Gordon. It would seem somewhat singular that iron should not have been employed in this form before, when we consider the multifarious variety of purposes to which it is now applied. A cast-iron Lighthouse was mentioned by Mr. Rennie, in 1805, for the Bell Rock, and also, as previously stated, referring to Mitchell's screw-piles, by Mr. Robert Stevenson, in 1800. Mr. Gordon's Lighthouses consist of wrought-iron plates riveted together in the usual way, and he proposed that all Lighthouses should be built to a uniform scale, so that any plate or part of the structure should be adapted for any other Lighthouse. The first tower of this construction was placed on the eastern end of Jamaica, called Morant Point.

Another is on the great Bermuda Island. This noble tower is erected on the centre of the remarkable group of islands, the scene of Shakespere's Tempest, and the focus of the Atlantic hurricanes. The Light-tower is 105 feet 9 inches high, formed with iron plates, the entire weight of which is nearly 100 tons. It has seven storeys, and the lower portion is filled in with concrete, to the height of 22 feet, to give it stability. Nearly every portion of the edifice is of iron, and

The proposal of Mr. Stevenson for the Bell Rock, before alluded to, was attempted on the Bishop Rock, and the structure was completed to the base of the lantern, when it disappeared in the course of a stormy night in January, 1850. The same disaster befel a similar structure on the Minot's Ledge, Boston Bay, U.S. These misfortunes have stopped any further extension of this principle, although it is of very great importance to secure a foundation on a treacherous bed in an exposed situation. A modification of this pile principle has been used more recently in structures built on difficult foundations at the mouth of the River Ebro, coast of Spain, and the Dedalus and Ashrafi Lighthouses, in the Red Sea. These consist of iron frameworks strongly braced together, and are of considerable elevation.

Many other plans have been suggested, among which the pneumatic pile of Dr. Potts deserves notice.

This beautiful adaptation of atmospheric pressure has been applied to the erection of several Beacons in the vicinity of the mouth of the Thames. The first experiment was

## DESCRIPTION OF LIGHTHOUSES.

the erection of the tower was completed in ten months, finished October 9, 1845, under the control of Mr. George Grove.

Another example of iron towers is that erected by the French Government at the entrance of Port Noumea, New Caledonia, in the South Pacific. It is a very fine building, 147 feet high, and formed a very conspicuous object in the great Paris Exhibition of 1867. A similar tower stands on the Rocher Douvres, in the English Channel.

One important point is the colour of Lighthouses. In many instances this has not been sufficiently attended to; and some of the noble Scotch towers, left of the natural colour of the stone, too much resemble the grey background. When it shows against the land, white, of course, is the best; and if against the sky, a dark colour is preferable. *Red* is sometimes used, as at Dungeness, &c.; and the extension of the use of coloured stripes and bands is recommended. This has been found particularly serviceable for day distinction in the British American lights, where the snow lies much longer against the field fences at right angles to the coast, and has precisely the same appearance at a distance as a white tower.

There is one difficulty in the use of coloured bands, and that is, during hazy weather, the appearance of the tower is frequently that of a ship under sail, the bright stripes being like the sails; this requires caution. The famous Eddystone has been painted in this way to distinguish it from the Bishop Rock.

The buildings we have been describing, commencing with those of ordinary land erections, and terminating with such towers as the Bishop Rock, have been extended as far as human skill and power can probably be exercised. Still it is necessary, not only to mark a danger, or indicate safety, but to warn ships from the approach to a shoal or reef, or to show a channel far away from land.

The numerous light-ships which have been established by Great Britain have greatly fulfilled this requirement. Our country possesses fifty-four such vessels, of which seven belong to Ireland and two to Scotland. Other countries have but very few light-ships. The United States has seventeen; formerly there were many more on the United States' coast, which have since been replaced by pile Lighthouses.

It is manifest that a lightvessel can perform its office but imperfectly, compared with the stability ensured in a fixed Lighthouse. Its floating character prevents the use of that refined and enlarged apparatus which is the characteristic of a Shore Lighthouse. In addition to this, the establishment of a lightvessel is very much more expensive. The average cost of the English lightships is £3,600; of the Irish, £6,200. Those of the United States (the best), the Nantucket New South Shoals, £4,375.

The cost of maintenance is much greater than that of a Lighthouse establishment. This is manifest from the difference of condition. Three men are sufficient to a rock Lighthouse, eleven are required to man a lightship; consequently, while the annual cost of a first-class Lighthouse is from £265 to £340; in Scotland, £380; Ireland, £405 to £485; and in France, from £320 to £415; that of the Lightships amounts to £1,103, £1,464, and £1,320 per annum for England, Liverpool, and Ireland, respectively, and £1,354 for the United States' Nantucket vessel. These are strong arguments in favour of stationary buildings.

The efficiency of a Floating Light depends on the attention paid to the points in reference to the quality of Lighthouses, with one very important addition, namely, that it should remain on its station in all weathers.

"The best proof that the lights are efficient in the last particular is to be found in the statements of the Lighthouse authorities, which are fully confirmed by the evidence of mariners. The Lightvessels very seldom go adrift, and there is no instance on record in which the crew have voluntarily run from their stations in bad weather. When they have been driven from their moorings, the vessels have always been replaced in a very short time, and none have ever been wrecked. The mariners' evidence on this point is valuable, because the rare instances in which Lightvessels have been off their stations are repeatedly mentioned by independent witnesses as remarkable events. It does not appear that the lights have ever been accidentally extinguished." But, unfortunately, they are sometimes run into by passing ships.

Much has to be learned about the best form for resisting the force of winds and waves when the vessel is always at anchor. The shape of the hull now varies considerably. Some are longer than others. The part of the vessel to which the moorings are attached, and the points where the chains enter, are different. The Irish vessels are generally longer and sharper than those in England, and set an after-sail when its use enables them to ride more easily. The

testimony of the men on board has been in favour of considerable length, fine entrance, and a low point for attaching the moorings.

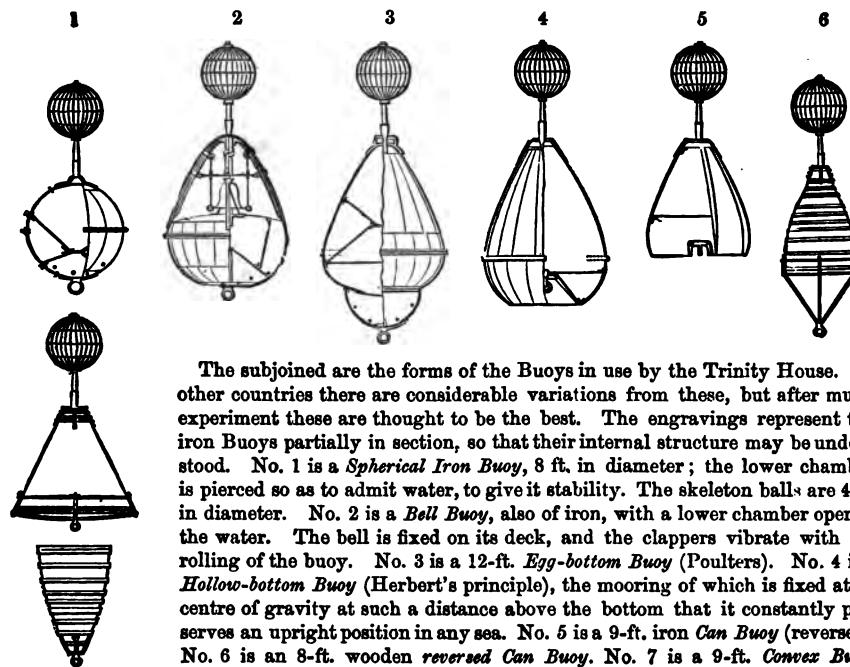
The Trinity House Lightvessels are painted red. In Ireland they are black with a white streak. At Liverpool, two are red and one black; and they are all distinguished by balls hoisted at the mastheads, and by other signals, and some have their names painted on their sides. Black and red seem to be the colours which contrast best with the colour of the sea, and they are, in fact, best seen.

The United States' sea Lightships, where they have been constructed on the improved models of the European floats, since the establishment of the Lighthouse Board in 1852, are painted either cream-colour or white.

It is a remarkable fact, that the Lightships lying in very exposed situations, as that at the Seven Stones, near Scilly, and the Coningbeg, ride very much easier than those in shallow though sheltered waters, as at the Spurn, off the Humber, the Owers, the Galloper, or the Arklow. This is owing to the great scope of heavy cable which is out in the one case, acting as preventive to her pitching heavily while she crosses the sea; and short cable renders a Lightship, in some positions, one of the most unpleasant situations in the world. In the shoal water, when the wind is strong, the vessels sometimes ride broadside to the tide and sea. Where the swell is much larger, as in the open ocean, the tides are not so strong. The efficiency of a Lightship is thus impaired by her want of stability at her moorings.

A few words may be here added upon *Beacons* and *Buoys*, as accessories to our present subject. In some cases Beacons approach the excellence and costliness of standing Lighthouses. Thus the dangerous Wolf Rock and Rundlestone were marked with stone Beacons, the first of which cost nearly £12,000, and immense labour; this has been superseded by the Lighthouse. There are 261 structures of some magnitude erected as Beacons under the public authorities of our country; and it is thought that our system, although capable of some improvement, is generally superior to that of foreign nations.

BUOYS USED BY THE CORPORATION OF TRINITY HOUSE.



The subjoined are the forms of the Buoys in use by the Trinity House. In other countries there are considerable variations from these, but after much experiment these are thought to be the best. The engravings represent the iron Buoys partially in section, so that their internal structure may be understood. No. 1 is a *Spherical Iron Buoy*, 8 ft. in diameter; the lower chamber is pierced so as to admit water, to give it stability. The skeleton balls are 4 ft. in diameter. No. 2 is a *Bell Buoy*, also of iron, with a lower chamber open to the water. The bell is fixed on its deck, and the clappers vibrate with the rolling of the buoy. No. 3 is a 12-ft. *Egg-bottom Buoy* (Poulter's). No. 4 is a *Hollow-bottom Buoy* (Herbert's principle), the mooring of which is fixed at its centre of gravity at such a distance above the bottom that it constantly preserves an upright position in any sea. No. 5 is a 9-ft. iron *Can Buoy* (reversed). No. 6 is an 8-ft. wooden *reversed Can Buoy*. No. 7 is a 9-ft. *Convex Buoy*. No. 8 is an ordinary 8-ft. wooden *Can Buoy*.

7 and 8

## DESCRIPTION OF LIGHTHOUSES.

In the form and character of Buoys there has been very great improvement of late years, especially since the employment of iron in their construction, as in the case of ship building. In Great Britain and Ireland there are about 1,100 Buoys in position, excluding wreck, warping, and many others of minor importance; about one-half of which are under the public authorities. They generally keep their positions excellently, the chief accident occurring through being run down.

The conical form and dark colours (black or red) seem to be the most useful. The cost of a Buoy varies from £27 to £36 for the ordinary can, up to £130 and £197 for the first class conical Buoys.

The *System of Buoyage* adopted by the Trinity House is as follows:—

The side of the Channel is to be considered starboard, or port, with reference to the entrance to any port from seaward.

The entrances of Channels, or turning points, shall be marked by conical Buoys, with or without staff and globe, or triangle, cage, &c.

Single-coloured Can Buoys, either black or red, will mark the starboard side, and Buoys of the same shape and colour, either chequered or vertically striped with white, will mark the port side. Further distinction will be given when required by the use of Conical Buoys, with or without staff and globe, or cage; globes being on the starboard hand, and cages on the port hand.

Where a middle ground exists in a Channel, each end of it will be marked by a Buoy of the colour in use in that Channel, but with annular bands of white, and with or without staff and diamond or triangle, as may be desirable. In case of its being of such extent as to require intermediate Buoys, they will be coloured as if on the sides of a Channel. When required, the outer Buoy will be marked by a staff and diamond, and the inner one by a staff and triangle.

Wrecks will still continue to be marked by green Nun Buoys.

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## CHAPTER III.

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### LIGHTHOUSE ILLUMINATION

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#### 1.—LIGHTS.

The first Lighthouses, such as the Cordouan and the North Foreland, had originally on their summits open fire-places or chauffers; in that of the former were burnt billets of oak wood, and that of the latter, coal; and this was the only means of indicating their situation during the night. A few words will show how incompletely these must have performed their office. Of course, the time at which a light becomes most serviceable is during tempestuous weather; and a wind, blowing towards the land, causes that dread to mariners—a lee-shore; yet this wind would drive the flames of an open fire away from the direction in which they were most wanted to be seen; thus the bars of the grate were often nearly melting to leeward, while towards the sea the coals remained untouched by fire. There was frequently, however, this advantage in the open fire, that during the fog or rain the glare of the fire was visible by reflection in the atmosphere, though the fire itself could not be seen. Such a feature would be of no advantage in the modern system, as will be hereafter shown.

The North Foreland Lighthouse, between Ramsgate and Margate, will be more familiar to many than other Lighthouses, and will serve as an excellent example of the progress of illumination. This Beacon was instituted for indicating the proximity of the Goodwin Sands. The first intimation we have of its existence is in 1636, in Charles the First's reign, when license was granted to Sir John Meldrum to renew and continue this and the South Foreland Lighthouse for the same purpose. At this time it was merely a large glass lantern on the top of a timber and plaster house, which was burnt in 1683. Towards the end of the same century, the present

tower was partially erected; a strong octagonal structure, having the iron grate, or chauffeur, for burning coals. From the difficulty of keeping up a proper flame in windy or rainy weather, about the year 1732 it was covered with a sort of lantern, with large sash windows, and the coal fire was kept alight by means of large bellows, which the attendants blew throughout the night. This was found not to answer, and the reflected glare above mentioned was thought desirable. Accordingly, the lantern was removed, and the fire restored to its original condition. Matters went on thus till 1790, when the tower was raised to its present height of 70 feet, and further improvements made in the lantern, by the introduction of lamps and other apparatus, hereafter to be described.

After some alterations of the Cordouan wood fire, the mariners complained that they could not see the light at the distance of two leagues, as formerly. But Smeaton informs us, that the coal fire of the Spurn Point Lighthouse, at the mouth of the Humber, which was constructed on a good principle for burning, had been seen thirty miles off.

The only exceptions to the fires were the noble Eddystone light, which then used to exhibit a chandelier of twenty-four wax candles, five of which weighed 2 lbs., and the Liverpool Lighthouses, which had oil lamps, with rude reflectors.

The use of coal fires has not been so long abolished as might be imagined. In Britain they were used till 1823. Thus the Isle of May Lighthouse, at the entrance of the Frith of Forth, had a coal fire till 1810; at St. Bees Head, Cumberland, oil was first used in 1823; at the Flat Holm, Bristol Channel, in 1820, &c. They were in operation on the two towers of Nidingen, in the Cattegat, till 1846.

The general use of *good* lights is of very recent date. During early times the modes of lighting were most imperfect; and the rude lamps, with their thick, torch-like wicks, which were the best then attainable, form a ridiculous contrast to the present universal brilliancy required.

Upon the introduction of the Argand lamp, a vast step was advanced towards the perfection of Lighthouses. This advance in artificial light was the greatest previous to the introduction of gas. It was discovered by M. Argand, a citizen of Geneva, about 1780 or 1785. It has remained as he left it, and appears as perfect in principle as can be looked for. Its perfection as an experiment was almost accidental. We are informed by the younger brother of Argand of its accidental discovery. He says, "My brother had long been vainly trying to bring his lamp to bear. A broken-off neck of a flask was lying on the chimney-piece; I happened to reach it over the table, and to place it over the circular flame of the lamp; immediately it rose with brilliancy. My brother started from his seat in ecstasy, rushed upon me with a transport of joy, and embraced me with rapture." Thus was the Argand lamp formed.

On the introduction of this more efficient means of illumination, and the consequent abandonment of the coal fires, Lighthouses assumed a more important position in maritime affairs, and they were accordingly largely increased in number.

The cylindrical-wicked lamp, in its various forms, is the usual mode of lighting employed in Lighthouses. For the reflectors, the wick is nearly an inch in diameter; for the lens lights, a more powerful and complicated lamp is used.

For a first order light, this lamp consisted, in the first instance, of four concentric wicks, of the respective diameters of 0.827, 1.69, 2.52, and 3.39 inches, the smaller apparatus being constructed of three or two concentric wicks; but within these last few years the interior wick has been removed from all the burners, it being thought that a light of superior brightness could be obtained by allowing more air to pass into the flame on the inside, and forcing this air outwards on to it by a metal breaker or button kept below the level of the flame, so as not to interfere with the rays of light emanating from all sides of it. But an undue economy has been forced on the consumption of oil, and the metal button hiding some of the upper rays, it is probable that the efficiency of the light has been impaired, and a portion of it screened from the upper part of the apparatus. The original form of the lamp will therefore be restored.

The oil is made to flow into the burners by various means, as is stated above. Fresnel's invention consisted of a series of four small pumps, worked by clock-work, which forced the oil upwards to the flames. Another mode was by weights acting on a piston; a third by a spring doing the same office—a plan which has since become in universal use in the moderator lamps. Another mode, the pneumatic lamp of Messrs. Wilkins, acted by means of the pressure of air in the reservoir; and another, frequently applied of late, is by placing the reservoir slightly higher than the lamp, the oil thus flowing freely by its own gravity to the required level.

The fuel used in the English Lighthouses in these excellent lamps up to the year 1846, was the

best sperm oil that could be procured. At that period a change was made throughout the whole of the lamps, by adapting them to the use of colza or refined rape-seed oil, requiring a thicker wick. This oil was in use in the French Lighthouses for some time prior to this, and was procured from the seed of a peculiar species of wild cabbage, known in the North of France under the name of colzat, or colza. This plant is extensively cultivated in Normandy, &c., the chief markets for the oil being Caen, Rouen, Lille, and Courtrai. This refined oil is of a superior character to the sperm oil; it produces a brighter flame, does not cause so much deposition on the wick, consequently will burn longer without trimming; any adulteration in it is much more easily detected than in sperm oil, and it is half the cost. It is an excellent substitute for the oil, which is annually becoming dearer, and more open to being mixed with other and inferior oils. In the Liverpool lights olive oil has been used since 1847—a change effecting a saving of 40 per cent. on the use of sperm oil. Olive oil is also used in the Spanish and Austrian Lighthouses. The United States lights are supplied with sperm oil exclusively. In our colonial Lighthouses other varieties of oil are used, of which one need only be noticed as having been used in the Lighthouses near the Cape of Good Hope. This oil is procured from the tips of the tails of the Cape sheep, and is said to be far superior to any other oil for brilliancy of light; but the quantity consumed, and the expense, are great. It costs 10s. 6d. per gallon, and the first-order light of Cape Agulhas consumed about 730 gallons yearly; 482 gallons of rape-seed oil would be necessary for one year's supply.

One great advantage in the rape-seed oil (which is refined or purified by sulphuric acid) is that it does not thicken, except upon a very great degree of cold, a qualification which places it far above sperm and many other oils for winter use. Indeed, the change is a fortunate one in another respect. The untiring perseverance of the whale-fishers from the neighbourhood of Nantucket has so dispersed and destroyed their prey, that it is almost doubtful if a continuous and sufficient supply could be maintained, except at great prices.

The purity of the fuel, and the perfect combustion effected by the present arrangement of lamps, keep the flames used in the apparatus in their normal condition; but it is necessary to carry off the products of combustion from the confined space of the light-room; for, if they were not disposed of, they would both materially diminish the power of the light, and also be a serious detriment to the health of the attendant light-keeper, whose constant presence in the light-room is strictly required. This is effected by the ventilating tubes devised by Dr. Faraday, with the principles of which most are familiar; they are fitted to all our Lighthouses. A plan, similar in action, but less complete in detail, was promulgated at the commencement of the present century by Dr. Van Marum.

That a light of such intensity will be discovered as will penetrate a fog, may be considered as utterly hopeless. The sun, the great source of light itself, is entirely obscured by a comparatively thin film of vapour; and although we have artificial lights which apparently rival in brilliancy that of the sun, they are quite incapable of being seen to any great distance under such circumstances.

Perhaps it would be as well to notice here the very great distances to which lights have been visible. One of these is recorded in the account of the trigonometrical operations in France, by MM. Biot and Arago. The points to be connected with Campvey, on the Island of Iviza, and a rocky mountain on the continent of Spain, called Desierto de las Palmas. On the former a powerful lamp, with reflectors, was placed. After watching for some months, a supposed minute star was identified as the signal light, and was afterwards easily recognized by the observers. This was a distance of nearly 100 miles. It is not intended by this example to say that a light could become serviceable at such a distance, but that it is possible to cause a light to be seen so far.

All modifications of lamp light sink into utter insignificance when compared with some other lights, produced by chemical means, from which very great expectations were formed, but hitherto with very little prospect of successful introduction. The first we shall mention is the Drummond light, generally known as the oxydrous or lime light.

Lieutenant Drummond, the first promulgator of this splendid light, was employed in the grand trigonometrical survey of England, in the course of which it became necessary to connect by observation Leith Hill, in Surrey, with Berkhamstead Tower in Hertfordshire, which were to be seen, but could not be distinguished from each other. The discovery arose from his consideration of Berzelius's experiments with the blow-pipe, as detailed in the "Philosophical Transactions," 1826—1831; and from the intense light produced in these, Lieutenant Drummond was induced

to try a jet of flame from the combined gases, oxygen and hydrogen, on a ball of lime. Many trials of its intensity were made, one of which was in the North of Ireland. A hill in Inishowen, called Slievesneagh, was always enveloped in haze by day, and a Drummond light was placed on it. In the line between it and the observing station was a church tower, much nearer to the latter, and on this an ordinary reflector was placed. The Drummond light, at the distance of 70 miles, was much more elevated than the other, which was 12 miles distant, and thus they appeared nearly on a level. When they were both seen, the Drummond light appeared to be much nearer and brighter than the lamp at 12 miles.

Its enormous power is evident from this, and it has been reckoned equal to 264 Argand lamps; and this is produced from a ball of lime three-eighths of an inch in diameter, and the angle which this minute object would subtend at the distance of 70 miles is only  $\frac{1}{16}$ th part of a second.

The difficulties of introducing this light, however desirable, appeared at first to be insuperable. The preservation of an equal intensity of flame is almost impossible, from the rapid diminution of the lime ball by fusion and volatilization, and by its frequently cracking and breaking. It has, also, the most painful effect on the eyes of the attendants, and is most injurious to the sight. The difficulties, however, of maintaining a steady light has been in part overcome. It has not yet been established in Lighthouses.

One great obstacle to the introduction of any light dependant for its intensity on the use of oxygen gas, is the cost of its production and the difficulty of storing the two gases necessary in isolated positions. But even this seems likely to be overcome, as a much cheaper process for procuring oxygen gas has been lately discovered, though not yet brought into ordinary mercantile use.

A proposition for increasing the intensity of the flame of the oil lamp was made by Mr. Gurney, in 1835; this was to impinge upon the flame jets of oxygen gas. This, by increasing the combustion, greatly enhanced the brilliancy of the flame, but it charred the wick.

The method of illumination by gas has been successfully tried for some years, as in the Lighthouse at Hartlepool. The burner here is that of Mr. M'Niel. Gas, as an illuminator for Lighthouses, was proposed, in 1823, by Signor Aldini, of Milan; and, from some experiments and trials made by the Commissioners of Irish lights since 1868, it seems probable that gas may, at some early day, be more generally used in Lighthouses. This question is, in some degree, dependant on another—the substitution of paraffin oil for colza oil—which is in process of discussion and experiment.

Gas possesses several advantages over the oil flame in its manageability and the ready way in which its power can be increased or diminished. It may also be so economised, that the appearance of a revolving light can be obtained by merely turning on and shutting off the gas at stated intervals, thus greatly economising the expenditure of the flame. This has been done at Troon Harbour, West Coast of Scotland, for many years. An intermittent light, 40 seconds bright, and 20 seconds eclipsed, is there shown, by a simple means, which causes a saving of one-third in the amount of gas expended.

The power of the flame from ordinary gas will not compare favourably with that from the oil lamp; but Mr. John R. Wigham has introduced a new form of burner, which he calls the crocus-burner, which was very successfully employed in the Howth Baily Lighthouse, Dublin Bay; and the gas used was of very superior illuminating power, made from Boghead Cannel coal. The cost, as compared with oil, did not vary very greatly, as shown by the rigid investigations made by Professor Tyndall in 1869-70; but, as before said, the ready means which are always at hand of increasing the power of the flame in fog or rains is of immense advantage. For Mr. Wigham's burner is made with 28, 48, 68, or 108 jets, all or any of which powers can be used as desired. As Professor Tyndall has suggested, this power of control might modify a great variety of our Lighthouse apparatus, by making the fixed light lens serve the purpose of a revolving light, or be an economy in the revolving lenses, by shutting off the flame during a portion of their revolution. And Mr. Wigham has proposed a new appearance of a light, by means of the revolving annular lens; and by extinguishing and re-igniting the gas in rapid succession, a well-marked flashing light, of a novel character, is produced. This subject being still under consideration, it will be needless to pursue it further here.

The next source of light we shall notice is that from petroleum, or mineral oil. Since the discovery, by Mr. James Young, of a method of obtaining paraffin from the Torbane Hill coal shale, a great revolution has been effected in domestic illumination almost throughout the world. But in the earlier days of its manufacture and use, there was much uncertainty as to its qualities,

and some amount of danger at times, from its varying degree of inflammability. Some of these difficulties have been overcome; and from numerous experiments made at the Trinity House before 1868, the authorities then concluded that no principles were involved in the construction of lamps for combustion of paraffin oil for Lighthouse purposes other than those already in use in other lamps for burning colza as well as paraffin oils. It was, and is, an admitted principle, that the constant level of mineral oil should be below the top of the burner; that of colza, which is less volatile, being just above the top of the burner, so as to give the overflow required in the latter for insuring perfect combustion. Beyond this necessary adjustment, and bringing the edges of the wick tubes a little closer together, as no space for overflow is necessary, no alteration has been found requisite in the large first-order lamp. Some experiments were conducted at the Trinity House in 1871, under the control of Professor Tyndall, as to the best form of lamp and the quality of paraffin best adapted for Lighthouse purposes. This latter is a very essential portion of a difficult problem; because paraffin, burning usually at a very low temperature, any minute fluctuations in the draught or currents of air, which would be difficult to control in the usually exposed position of a Lighthouse, will greatly affect the power and brilliancy of the flame. Mr. James N. Douglass, so well known for his talent as an engineer, has so adapted the Trinity House Lighthouse lamps to the burning of paraffin, that they have shown quite the maximum effect which has yet been produced. Captain H. H. Doty has also designed, or rather converted, this form of lamp to the same purpose, with excellent effect; but, owing to the difficulties hitherto encountered, it is not considered that the best form has been entirely obtained. One very important point awaits the satisfactory solution of this problem, and that is the great reduction in cost, which may not be much more than one-half of that required for colza oil to produce an equal intensity of light. The petroleum light has been placed in several of the French Lighthouses, in the new and splendid light apparatus at Flamborough Head, and at some other stations in Scotland and England.

It will not be necessary to describe several other lights which have been proposed, such as the oxy-hydrous light, from zircon, or the burning of magnesium, either in the form of wire, or powder, &c., which produce excellent illuminating powers, but which are found unsuitable for Lighthouse purposes.

The ELECTRIC LIGHT is the most wonderful of all the means now employed in Lighthouses, whether it is viewed as the result of the most exalted science, or of the consummate skill which has utilized this mysterious agent. Naturally, this very complicated question resolves itself into two distinct portions—the means employed to produce the power, and the apparatus for utilizing it.

In the outset, the ordinary galvanic battery was used as the producing agent; but, from the great force required, and the great number of elements, or cells, necessary, it was found to be almost impossible to maintain it in an equable condition. The action of the acid on the two metals rapidly decreases, and there is great difficulty in replacing it without interruption. The lamp of Messrs. Staite and Petrie was one of the first applications of this, in 1848, but its clock-work action was unequal to the difficulties of controlling an uncertain and varying electric current.

It is to the talent and assiduity of Mr. T. H. Holmes that the solution of the problem is owing, and he makes use of *magneto-electricity* as the agent for producing the light.

In the year 1831, it was discovered by Faraday, that when a piece of soft iron, surrounded by a metallic wire, was passed by the poles of a magnet, an electric current was produced in the wire, which could be exalted so as to give a spark.

It would be exceedingly difficult to explain verbally the admirable machine which is now used. Briefly it is this, a series of three or more concentric rings of very powerful magnets are arranged on a frame, 9 or 10 feet in diameter. Between these rings of magnets a corresponding series of electro-magnets, which are formed of soft iron cores, around which the copper wire helices are wound, are made to revolve, being set in motion by a steam-engine. The brass wheels, carrying these bobbins or helices, make 110 revolutions per minute, and at every revolution about 85 lbs. of soft iron are magnetised, by each of the electro-magnets taking up a portion of the power from each of the permanent magnets as it passes close-to, but, of course, without touching them. The magnetic state of the soft iron is changed 4,840 times in each minute. The immense amount of magneto-electricity thus evolved is collected at the axis of the apparatus, and thence passes to the regulator or lamp in the focus of the Lighthouse apparatus.

This light, which was in operation in the Great Exhibition of 1862, was certainly the greatest wonder that that world of marvels contained, and a feeling of awe arose at the contemplation of

a machine that of itself gathers together, from separate masses of quiescent iron, that mysterious agency, or power, or force inexplicable, by which nature's processes are carried on, and by which our very life and actions are maintained, and made it manifest to the sense in light as glorious as the sun itself. The whole process is a marvellous illustration of that correlation of each physical force in nature's workings—an evidence that one power may be traced throughout a train of operations until it emanates in a totally different form, and yet that all these phases of action are identical.

The magnetic current passes from the machine, thus obscurely described, to the lamp, which holds two carbon electrodes, or pencils, placed perpendicularly one over the other, and between the points of which the light appears. These carbon points are formed of graphite, the substance which is found lining worn-out gas retorts, and consist of nearly pure carbon; they are about  $\frac{1}{16}$ th of an inch in diameter.

To produce a constant electric light, it is requisite that the carbon points should be maintained separated to a distance proportional to the strength of the current. The intense heat generated by the electric current liquefies a portion of the carbon, and the current passes from one carbon point to another, not through empty space, but through the carbon thus liquefied.

It is in this space between the two carbon points that the light appears, and although they are only  $\frac{1}{16}$ th of an inch apart, yet in this minute space this splended effulgence (for it cannot be called a flame) is of sufficient power to entirely eclipse all other artificial lights. The carbon points under this intense action slowly consume, the upper pencil at about double the rate of the lower one (they require replenishing about every  $3\frac{1}{2}$  hours); and the object of the regulating lamp is to maintain them at an exact distance apart proportionate to the force of the magnetic current which is passing between them. This is effected by controlling the descent of the one, and the ascent of the other, by electro-magnets acting on levers, contained within the lamp apparatus.

This minute light, as before said, is of such intensity that no other flame can be compared with it; it is of itself only  $\frac{1}{16}$ th of an inch in diameter, but around it is an effulgence which may be half an inch in diameter. Its colour is of the purest white, and in this it differs from all other lights. Mr. Holmes says:—"The object is to have light as much like sunlight as possible. In ascending the stairs of Dungeness Lighthouse—where the magneto-electric light is in operation—it is a most extraordinary thing to observe the light; it always appears as if it was the dawn of day; it never looks like gaslight."

On the 8th of December, 1858, this modification of that mysterious electric power, which—as applied to the mariner's compass—has piloted the sailor for centuries across the seas, was for the first time made to complete its friendly service of guidance and of warning, by being shown from a Lighthouse on the English coast. The magneto-electric light was exhibited from the high light at the South Foreland, near Dover, on that evening, and on those of several subsequent weeks.

The light was subsequently (in June, 1862) shown at Dungeness Lighthouse, and still continues there. It was placed in the Souter Point Lighthouse, near Sunderland, in 1871; and both of the South Foreland Lighthouses were first illuminated with it on January 1, 1872. It is also shown at Cape Grisnez, opposite Dungeness.

In these establishments everything is in duplicate, to avert the chances of extinction—two small steam-engines, two magneto-electric machines, two lamps, &c.; and, during fogs, when a more powerful light becomes necessary, a double power (both machines) can be used.

The totally distinct character, the power, and colour of the electric light, will at once distinguish it at any distance from that derived from any other source. Therefore, supposing that this illumination be adopted as an adjunct to that in present use, the stations in which it is applied will be distinguished from their neighbours without the chance of mistake, the fruitful source of accident from the present lights.

A few words on the use of coloured lights. The oil flame is of a yellowish tinge, and this so far neutralises the effect of blue or green lights, that they are found to be inapplicable to Lighthouse purposes. Mr. Holmes believes that, by using the pure electric light, these colours would be almost as serviceable as the bright light itself.

*Red* is the only effective colour in use, and this in the reflectors is produced by placing a pane of ruby-coloured glass in front of the reflector, or else by a red chimney to the lamp. But this colour absorbs a very large proportion of the white light; and when it was determined to show a revolving red and white light at the Wolf Rock Lighthouse, several important experiments

## DESCRIPTION OF LIGHTHOUSES.

were made by the Trinity House authorities to determine the ratio of the two beams to give the same amount of intensity. It was found that the quantity of light to be appropriated to the red beam should be to that of the white, as 5,275 is to 2,250, or as 21 to 9 nearly; so that the revolving lenses had to be constructed to these proportions.

One word as to Fog Signals at Light-stations. It is necessary to mark their position when the light is obscured in fog, snow, storms, or thick weather. A heavy bell is frequently used; but, as ships use such a means of signalling, it is not free from objection. The same with the fog-horn. On board light-ships a Chinese gong, which emits a peculiar and powerful sound, is used. The most effective instrument is the fog-horn, and this is becoming very general where fogs are prevalent, as on the coast of North-East America. Daboll's fog-trumpet is a very effective instrument. It consists of a caloric or hot air engine, which is set in motion directly the fire is lighted, and the air-pump it acts on forces a column of air into a receiver at very great pressure, and this, at a certain number of strokes, is set free through the trumpet. This consists of a tube, revolving horizontally on an axis, at the small end of which is a powerful vibrating spring, or tongue, producing a most powerful note. The mouth of the trumpet being alternately directed towards all points of the horizon, it is said that the sound may be heard in the direction of the wind to the distance of 25 miles in favourable circumstances, or to 5 miles under less advantage.

This above brief exposition must suffice as to the source of light. The apparatus used to control or economise this light is of two characters, either by reflectors or lenses, the catoptric or dioptric systems.

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## 2.—THE CATOPTRIC, OR REFLECTOR SYSTEM.

The effects of a light in giving out rays without any controlling apparatus will be to fill a sphere whose radius is equal to the distance at which the light is visible. In the light shown from a Lighthouse, those beams which are thrown upwards or downwards beyond the reach of vision would be totally lost for practical utility; it becomes necessary, to economise the light, to deflect these rays and cause them to assume that direction only in which they would be required. For all practical purposes, at present, we may consider that those only which issue in an horizontal direction are effective, and our apparatus must be so ordered to answer the end of forming an horizontal ~~beam~~ <sup>zone</sup> or zone of light.

To do this we have two alternatives, the one to *reflect* the errant rays into the proper direction, by means of mirrors of the requisite form; or to *deflect* them, by causing them to pass through some refracting medium for the same purpose; in other words, to apply *lenses* of a particular form *before* the light, or reflectors *behind* the light.

The first idea of economising light, by the means of reflectors, is met with in the history of the Cordouan light. M. Bitri, who remodelled the lantern in 1727, arranged it for burning pit coal, of which 225 lbs. (French) were ignited at once, and lasted the night. Above the fire, instead of having a hollow cupola, as it had previously been, or of being entirely open like other Lighthouses, the circle of the ceiling of the cupola was made the base of an inverted cone, whose apex projected downwards 3 feet; the whole surface of this was covered with tin plates. These becoming reflecting surfaces, served to increase the intensity of the light; but how they were kept free from tarnish, and the effects of the smoke, we are not informed. Here we have the first element of the reflector system, and it is virtually the principle of the present Bordier-Marcet apparatus. Such an arrangement would certainly answer its requirements as applied to a coal fire, and any improvement on it must be also made in conjunction with some better mode of producing a light.

As the Catoptric principle depends on the figure of the parabolic curve, we will first describe this curve.

The Parabola is a conic section, whose figure possessing certain properties, renders it available for the purposes of reflection, and the true formula for its construction, as applied to Lighthouse purposes, is given by Captain Joseph Huddart, F.R.S.

The form given to the Lighthouse reflector is generated by the revolution of this curve round its axis. Its properties will be better understood by the diagram, which represents the section of a Lighthouse reflector and lamp. A is the oil reservoir of the lamp F, which slides on the vertical rod B, and on which it is lowered for trimming, by means of this the flame is accurately replaced in the focus of the reflector at F. P V G is a section of the reflector, and is a parabolic curve; within it is a point, F, which is called the *focus*, which is the situation of the flame. Now it is a fundamental law in optics, that the angle of incidence is equal to the angle of reflection; that is, the ray is thrown off a reflecting surface at the opposite angle to which it is received. The peculiarity of this curved line of the parabola is, that any line drawn from the *focus*, F, to the parabolic curve, as F a, makes with the normal to the curve, as a h, angles equal to the inclination of these same normals respectively to lines drawn parallel to the axis, V Z. Thus a ray from the lamp, F, thrown on the surface of the reflector at a, will be reflected in the direction a f, which is parallel to the axis, V Z, and the angle of reflection is equal to the angle of incidence; or, in other words, it makes with the normal, a h, the angle, g a h, equal to the adjacent angle, h a f. And this property belongs to every portion of the surface of the parabola, and consequently the rays will be represented by the lines F b b', F c c', F e e', &c.

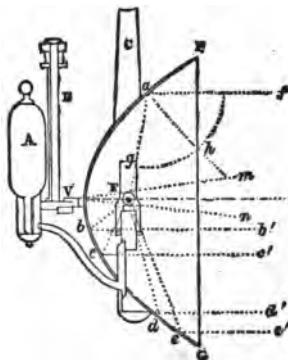
Supposing it possible to produce a perfect reflector of the foregoing figure, and in its focus we were to place a *point* of light, it would send forth a *cylinder* of rays equal in diameter to its double ordinate, or the distance between G and P; and if we had to construct a light apparatus which should exhibit a light in every direction in azimuth, or round the whole 360 degrees of the horizon, it is manifest that it would be impossible to do so with any number of such instruments; there would be dark intervals between the direction of their axes.

But here another circumstance awaits us. The flame of one inch in diameter, used in illuminating such a reflector, supposing the focal length of the reflector to be 4 inches, will subtend an angle of  $14^{\circ} 22'$  at the vertex of the parabola, or the angle m V n. Thus the reflected rays from the external edges of the flame will diverge from the axis to one-half such an angle on either side of it. This divergence decreases in those rays which strike the surface at greater distances from the vertex; but, combined with other circumstances, between  $11^{\circ}$  and  $15^{\circ}$  or  $17^{\circ}$  of divergence may be considered as effective from such an instrument. It would, therefore, take from twenty-five to thirty-three such reflectors to form a complete zone of light.

With respect to the invention of parabolic mirrors, we find them mentioned at a very early period, though not in connection with the subject of illumination, but in reference to their powers of focalising the rays of the sun to form burning instruments, an inverse principle of that of lamp reflectors. In a work, entitled "Pantometria," by Leonhard Digges, published in London in 1571, the author states that "with a glasse framed by a revolution of a section parabolical, I have set fire to powder half a mile and more distant." In the prosecution of this subject, the celebrated Napier and Sir Isaac Newton experimented with parabolic reflectors before 1673. And the celebrated Buffon, with the same object, proposed the polyzonal lens, now modified for Lighthouse purposes, as will be mentioned hereafter.

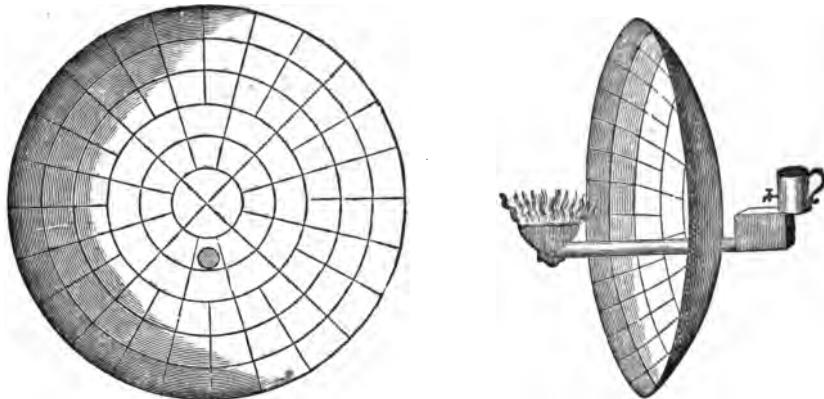
The first parabolic reflectors for Lighthouses were used at Liverpool, probably in 1763, certainly previous to 1777, for in that year William Hutchinson, Dock Master of that place, published his "Practical Seamanship," and in that work he fully describes the apparatus used in the four Lighthouses built at Liverpool in 1763.\*

The origin of their use is curious. It is said, that at a convivial meeting of some scientific men at Liverpool prior to this date, that one of the company wagered that he would read the



\* Lighthouses were not always looked upon as useful aids. The Mayor and Corporation of Liverpool wrote to Sir G. Ireland, their representative in Parliament, on January 5, 1670, to appear against Reading's patent for Lighthouses:—"In regard those Lighthouses will be no benefit to our mariners, but a hurt, and expose them to more danger if trust to them; and also be a very great and unnecessary burden and charge to them."—See "Transactions Historic Society of Lancashire and Cheshire," vol. vi., pp. 16 and 24.

newspaper at the distance of 200 feet by the light of a farthing candle. This he afterwards won by means of a wooden bowl, lined with putty, in which facets of looking-glass were embedded,



Parabolic Reflectors used in the Liverpool Lighthouses, erected in 1763; copied from a plate in Hutchinson's "Practical Seaman," 1777, formed of wood, and lined with pieces of looking-glass, or of plates of tin. The oil kept on a level with the flame by a dripping-pot, supplying the reservoir at the back.

and formed a reflector. One of the company was William Hutchinson, who, seizing the idea, thus utilized it.

These reflectors were formed to a parabolic curve by a somewhat rude process, which he describes.

"We have had," says Mr. Hutchinson, "and used here in Liverpool, reflectors of 1, 2, and 3 feet focus, and 3,  $5\frac{1}{2}$ ,  $7\frac{1}{2}$ , and 12 feet diameter. The smallest made of tin plates soldered together, and the largest of wood covered with plates of looking-glass, and a copper lamp; the cistern part for the oil and wick stands behind the reflector, so that nothing stands before the reflector to interrupt the blaze of the lamp acting upon it, but the tube that goes through with a spreading burner mouth-piece, to spread the blaze parallel thereto, and with the middle of it just in the focus or burning point of the reflector.

"The lamps are like the reflectors, proportional to make a greater or less blaze as required; their spreading burning parts are from 3 to 12 and 14 inches broad, and are trimmed every four hours.

"Thus are these Lighthouses constructed, kept, and situated, and have stood the test of a fair trial, and the preference and advantages given to them even by their opponents, as there always will be to new things commonly calling them new whims, till time and trial confirm them as useful improvements."

Thus writes Mr. Hutchinson, in 1777; and he also proposed other and more complete reflectors similar to those we now possess.

The reflectors now used in the Trinity House lights are constructed, as before mentioned, according to the formula proposed by Captain Joseph Huddart, F.R.S., an Elder Brother of the Trinity Corporation; and a man of whom England may be proud. These reflectors are hence known by the name of Huddart's reflectors; and, as far as their principle is concerned, they may be pronounced perfect. Their manufacture is conducted with every care; but, of course, it is absolutely impossible to produce a faultless instrument; but as they are made, they may be considered among the most perfect specimens of workmanship.

The proposition for parabolic reflectors was made by M. Teulère, of the French Royal Engineers, in a memoir dated June 26, 1783, as intended for the Cordouan Lighthouse, but they were in use in England many years previous to that period.\* They were also constructed, by Lenoir, of silvered copper, under the direction of the Chevalier Borda, in 1780.

\* In the admirable account of the Skerryvore Lighthouse, &c., by Alan Stevenson, Esq., page 205, and in his "Rudimentary Treatise on Lighthouses," page 73, the merit of the first application of reflectors is awarded to

In the year 1786, reflectors and oil lamps were proposed at the first meeting of the Scottish Lighthouse Commissioners. The first metallic reflectors used in the northern Lighthouses were constructed by Mr. Thomas Smith, of Edinburgh. The figure was given to them by a plaster mould, and the cavity was afterwards filled in, by means of cement, with small facets of mirror-glass. This must have done its work very imperfectly, although the general figure was capable of considerable accuracy. In 1803, the first polished metal reflectors used in Scotland were placed in Inch-Keith Lighthouse.

The reflector system has been called the English system, in contradistinction to the lenticular or French system. This is because we had numerous Lighthouses in which this fine apparatus had been perfected before the French, who were second in the field, had any systematic arrangement, which was indeed not until after 1825, when the late Admiral Rossel drew up a perfect system for the lighting of the whole of the French coasts, an immense advantage which the English have not been able to possess. In the early days of the present Lighthouses the reflectors were supposed to do their work so perfectly that but little could be gained by a change to the expensive and difficult system of lenses. Later enquiries have not entirely subverted this opinion, as is stated in the report of the Royal Commission, March, 1861 :—

“ It has been generally assumed that the dioptric is preferable to the catoptric system; but while your Commissioners do not controvert this opinion, they have conclusive evidence that many of the catoptric lights in England are not only excellent in themselves, but exceed in efficiency the dioptric lights on its shores. The first part of Question 7, of Circular VIII, addressed to mariners, runs thus:—‘ What British light have you usually seen farthest off?’ And out of the 579 witnesses who have answered this question, the greatest *distances* are mentioned with reference to the lights at Lundy Island, the Calf of Man, Tuskar, Flamborough Head, Beachy Head, and Cromer; and the greatest *numbers* of witnesses mention Flamborough Head, the Lizard, Lundy, Beachy Head, the Start, and the South Stack, all of which are catoptric revolving lights, with the exception of the Lizard, which is catoptric fixed, and the Lundy and Start, which are dioptric revolving.”

The reflectors in use at the Trinity House are 21 inches in diameter for shore lights, and 4 inches of focal length, having a total reflecting surface of 518·6 square inches. They cost about £31 10s. The Scotch are of 24 inches aperture, and cost £43. They are most excellently made, and have lasted, unimpaired, 30 or 40 years.

The brilliancy of the ray from this reflector is considerably stronger in the direction of the axis, that is, when viewed directly in front, than it is for some distance on either side of that direction; and at great distances, in *fixed* lights, when you are in the direction *between* the axes of the adjoining reflectors, the light is frequently glimmering and feeble, but a small change in the position of the ship brings you again into the brighter beam of the reflector, one of which, it will be understood, is only in sight at a time. This is an important observation to the sailor, in distinguishing one fixed light from another, of different description of apparatus.

When a *revolving* light is required, a number of these reflectors are fixed to the sides of a triangular or quadrangular iron frame, and the whole caused to revolve in regular periods, by means of clockwork. The reflectors on each side of the revolving frame, from four to eight in number, are thus successively directed to every point of the horizon; and the combined result of their rays form a flash of greater or less duration, according to the rapidity of their revolution.

From the amount of divergence, the period during which such a light will remain visible is from 12 to 15 seconds, the light gradually increasing, and as gradually diminishing. And as the action of the reflector is only in the direction to which it is placed, the intervals between the flashes will be quite dark, for a shorter or longer period, according to the distance from which it is viewed, whether it is beyond that to which the unassisted flame will reach.

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M. Teulère. But the author quotes from a second (or Liverpool) edition of Hutchinson's work, in 1791. The first (or London) edition, illustrated by the same plates, and containing much the same matter, was published in 1777, under the title of “A Treatise on Practical Seamanship,” &c.; a different title to the second edition. It is beyond question that reflectors were in use in Liverpool before they were in the Cordouan.

Hutchinson closed a life of much usefulness and excellence in 1800. He was dock-master in or prior to 1759. In 1764 he commenced a valuable series of tide and meteorological observations, continued till August, 1793. In early life he was shipwrecked, and the crew being without food, they drew lots to ascertain who should be put to death, to furnish a revolting and horrible meal to the survivors. The lot fell upon Hutchinson, but they were providentially saved by a ship which hove in sight. He ever afterwards observed this day as one of strict devotion.

“Trans. Historical Society of Lancashire and Cheshire,” vol. ix., pages 240, 241.

The light from a revolving catoptric or reflecting system is much brighter than from a fixed light on either principle, as you have the combined effect of several reflectors, each of which gives an equal amount of light, it is calculated, to 350 or 450 such lights without any reflectors.

In floating Lightvessels the light is always shown from parabolic reflectors. These are smaller than those used in Lighthouses, being 12 inches in diameter. For fixed lights, eight lamps and reflectors, each suspended on gimbals, or on ball and socket-joints, so that they always maintain their perpendicularity, notwithstanding the rolling of the vessel, are arranged in an octagonal lantern, which goes round the mast, and is hauled up to the mast-head when on service, and is let down on the deck during the day, or while the lamps are trimming. Revolving lights for

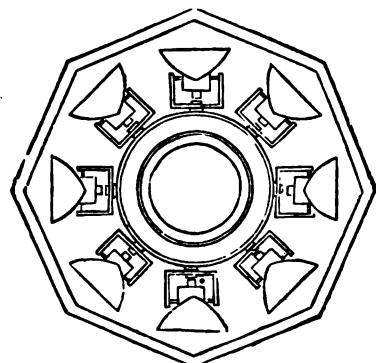
floating Lightvessels have four or eight lamps, and similar reflectors, and the lantern revolves around the mast. The adjoining diagram is a representation of one of Messrs. Wilkins' Revolving Light Lanterns. It is very similar to that of a fixed light, the clock-work moving it is placed between decks.

Several of the Lightvessels are now made to show revolving red or bright lights where they were formerly fixed lights, as in the case of the Nore Lightship, it having been found that in many cases it was difficult to distinguish the fixed light of the Lightvessel from the mast-head lights of the ships at anchor near them.

An apparatus for producing an *intermitting* light, of the only appearance to which such a term is applicable, is in use in three of the Scottish Lighthouses, the invention of Mr. Robert Stevenson. It is an arrangement by means of which the light is suddenly obscured by an eclipser, and as suddenly appears again at its full brilliancy. This feature distinguishes it completely from revolving lights, which come gradually to their greatest brightness, and as gradually decrease, and this either from the reflecting or refracting apparatus. This effect could be easily and economically produced by the use of gas, as before explained.

There is yet another sort of reflector in use in France for harbour lights, called the Bordier Marct apparatus, from its inventor, or the sideral lamp (*fanal sidéral*). It is used with a single lamp, and consists of two circular reflectors, about  $13\frac{1}{2}$  inches diameter, whose figure is formed by the revolution of a parabola around its focus in an horizontal plane; the centre of this is taken out to admit the lamp, which thus has all around it, above and below, a reflecting surface, which sends its upward and downward rays in an horizontal direction.

The lights in the ensuing list, which are upon the catoptric or reflecting system, are distinguished by this mark ●. Their magnitude, or order, is not indicated; the class of the light is to be inferred from its importance.



### 2.—THE DIOPTRIC, OR LENS SYSTEM.

This system—that in which the controlling apparatus is placed before the light—is next to be considered.

There are several very early notices, which seem to shadow out this principle. One is given in Smeaton's account of the Eddystone, where a London optician proposed to grind the panes of the lantern to circular segments, so as to form a sphere of 15 feet in diameter. This was negatived, and we cannot learn what the particulars were, although an optician, it would be thought, would deal with refraction and economise the light.

The use of lenses in Lighthouses dates from early times. It is more than probable that Argand's invention soon directed attention to the best mode of concentrating the light. William Hutchinson relates an experiment tried at Liverpool with a hollow lens filled with brine, which, however, was broken by the heat of the lamp. It is certain that they were placed in one of the Portland Lighthouses between 1786 and 1790, by Thomas Rogers. These lenses were 21 inches in diameter, and  $5\frac{1}{2}$  inches thick in the centre; the flame of the lamp was 3 inches in diameter, and behind it was placed a glass (spherical) reflector, 12 or 18 inches in diameter, and by a new method silvered over the convex side without quicksilver. These lenses were also adopted by Rogers in the Lighthouses at the Hill of Howth, and at Waterford. Similar, but smaller lenses, 16 or 18 inches in diameter, carefully worked, and which cost £50 each, were in use at the North Foreland. There were fifteen of them placed there at the commencement of the present century by the Governors of Greenwich Hospital, where they remained till 1834, when the Trinity House replaced them by reflectors, which have again been removed for a beautiful dioptric apparatus.

The lens apparatus now in use is peculiar. It is called, from its figure, the Annular or Polyzonal Lens.

The history of the polyzonal lens is simple. Like the parabolic reflector, it was originally designed for a burning instrument, by collecting the rays of the sun, and for no other purpose. For a very long period these instruments, of various forms, occupied a large share of the attention of the experimentalists of the last and preceding centuries. Modern progress has converted them into scientific toys.

The merit of the earliest suggestion is due to the celebrated Buffon, the French naturalist, who, in 1773, according to Condorcet, proposed, for a burning glass, to form it of three concentric circular pieces upon each other. If a lens were required of 24 inches in diameter, and 3 inches thick in the middle, then the central portion was to be of 8 inches diameter, and 1 inch thick, inserted into a circular zone, ground to the same focus, and 16 inches in diameter; and this again into a similar zone of 24 inches. Buffon states that the rays would be twice as powerful passing through 1 inch as they would through 3 inches thickness of glass.

The suggestion of Buffon was acted on by the Abbé Rochon, with some success, in 1780; but his operation consisted in grinding down a single piece of glass into concentric rings. A similar lens was made by Messrs. Cookson, of Newcastle-upon-Tyne, and tried by the Northern Lighthouse Board. This process is necessarily attended with an enormous amount of trouble and expense, and the result must be precarious.

The particulars of Buffon's invention appear in most of the English and Scotch Encyclopaedias, published after 1796. In 1812, Sir David Brewster proposed a plan for a built lens in the Edinburgh Encyclopaedia, vol. v. This was also intended for a burning instrument, and no mention is made at this time for its converse properties, that of distributing light, as adopted for Lighthouses. There is no need of controversy on this. Lighthouses, at this date, had not then attained the importance they now have; and the beautiful reflectors then in use, as in the Bell Rock, were considered to do their work perfectly. Besides this, the polyzonal lens is not adapted for *fixed lights*; the cylindric refractor for the purpose was not perfected till 1836.

It is to the late M. Augustin Fresnel that we owe the introduction of the lenticular system, and hence it is frequently called by his name. Its origin dates from 1819. During the progress of the great Trigonometrical Survey of France, under MM. Arago and Mathieu, powerful lights were used as signals; and one of these lenses, 3 feet in diameter, constructed by M. Soleil, from the designs of Fresnel, was applied to a large lamp on Cape Grisnez, and other places, in the autumn of 1821. Major Colby, who was employed in the operations on our side, informed

Mr. Robert Stevenson of the particulars, in November, 1821. On July 23, 1823, the splendid revolving apparatus of this system was first shown in the Cordouan Lighthouses.

In 1824, Mr. Robert Stevenson visited the French Lighthouses, &c., and reported on them to the Scottish Lighthouse Board. The first application of the system there was in the Isle of May Light, by Mr. Alan Stevenson, the talented son of the before-named eminent Lighthouse engineer, in October, 1825. Holland was the first to follow France in the use of the system. The Trinity House erected the first lenticular apparatus in the Start Lighthouse, in 1836.

The Lighthouses of France were very few in number prior to Fresnel's invention; upon his success the French Government determined upon the establishment of the grand system adopted in 1825, and of the sole application of the lens in all cases of new lights. The case was different on our side. Many of the present lights existed long before the invention of Fresnel, and, having been erected as exigencies arose, there necessarily was not that exact order and regularity that might have been attained by a total change and remodelling at any period. That our system does not suffer by comparison with those of other countries, is a grand proof of the talent of our Trinity Board and other authorities, and of the skill of our engineers.

The lenticular apparatus may be thus described:—It consists of a central and powerful lamp, of course emitting luminous beams in every direction. Around this is placed an arrangement of glass, so formed as to *refract* these beams into parallel rays in the required directions.

The laws of refraction are well understood, and require but little explanation here. We shall just allude to it sufficiently to elucidate our subject. When a ray of light passes out of a rarer into a denser medium, or *vice versa*, it is refracted from its original direction, and assumes that which is induced principally by the density of the second medium. This is made familiar by the bent appearance of an ear, or a mooring when it dips beneath the water. The use of the glass lens is thus to bend the rays which fall on and emerge from its two surfaces. The action of the bull's-eye lantern, in sending forth the rays in one direction, will explain this principle. As the normal figure of the lens is that to which its powers are due, the polyzonal lens must be considered as such a complete lens with the unnecessary portions cut away.

One great advantage in the decomposition of the original lens is that of diminishing its weight very considerably, and also the greater certainty of the more uniform density of the material from which it is made. There is also another point in the construction; it affords the means for correcting the aberration for sphericity, a great point in the manufacture of lenses. The principle of the polyzonal lens being thus explained, the method of applying these to control the luminous rays of a lamp is now to be shown. For this purpose they are built into a square figure, that is for such lenses as are for revolving lights.

For a *revolving* light, eight of such lenses, which, for a light of the first order, have a focal length of 3 feet 0.25 inches, are formed into an octangular drum which surrounds the central lamp, placed in their common focus. This, then, is the principal portion of the controlling apparatus for a *revolving* light.

The lamp which this system is applied to contains four concentric wicks (of the respective diameters of 1.87, 1.69, 2.62, and 3.39 inches), and the oil, by a peculiar construction, either by a mechanical contrivance of small pumps worked by clock-work, or of springs or weights, or else

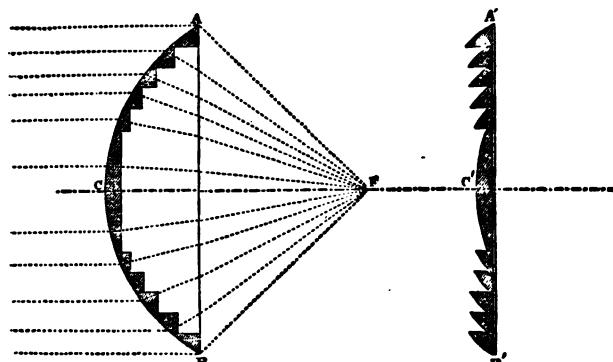
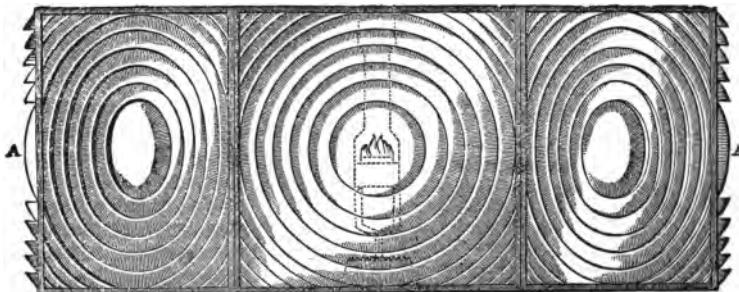


Diagram illustrative of the principle of the polyzonal lens. A B C is a section of an ordinary plano-convex lens, whose focus is at F. As the great thickness of the central portion abstracts much of the light in its passage, the convex surface may be supposed to be cut into circular zones, whose section is as the shaded part of the diagram, and these sections being all placed in one plane, as A' B' C', the latter will have all the optical properties of the former, because the two surfaces are still of the same relative figure.

by the pressure of air upon the surface of the oil in the reservoir, is made to flow copiously over these wicks, otherwise the great heat evolved during its combustion would char the wicks. This lamp consumes a pint of oil per hour; or, according to the computation of the French Commission des Phares, 570 gallons per year. This powerful apparatus being in the centre of the surrounding lenticular system, the ray impinging upon each lens is refracted into a series of parallel, or nearly parallel beams, whose section is the figure of the lens, in the case of the revolving light, or into a continuous zone or band of light around the horizon in the fixed light. M. A. Fresnel, in the construction of the Cordouan dioptric system, used a more complicated system than that above described. A similar arrangement also is in operation at the Skerryvore, and some other stations; and in these cases every available means is taken to economise the light.

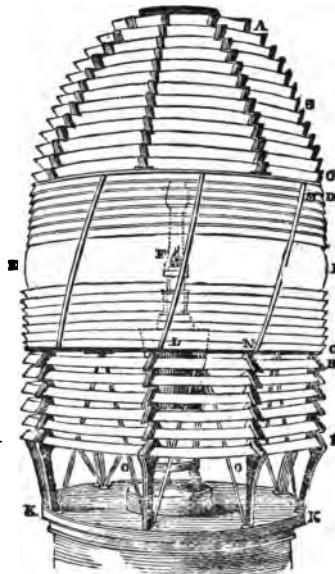


The central portion of a first order dioptric revolving light apparatus. A A represents the polygonal lenses, of which there are eight, arranged around the central lamp. The diameter of the octangular prism formed by them is 6ft. 0.5 in.

For a *fixed* light, another adaptation of the principle is used. We must suppose the section of the lens, A B (Diagram on page 20), to revolve around the focal point, F, and in the same plane, which will produce a series of horizontal belts, having their vertical section similar to that of the lens in its circular form. The effect of this, applied to a central lamp, will be to produce a continuous belt of light in azimuth, instead of a series of beams parallel, or nearly parallel, to the axis of the circular lenses, as in the case of the revolving apparatus. In the focus of this belt, or drum of glass, is placed the lamp, as in the former case.

Originally this cylinder for a fixed light of the first order was made into a polygon of thirty-two sides; but in 1836 the Messrs. Cookson, of Newcastle-upon-Tyne, made one entire, which was the greatest step then achieved in the construction of these lenses.

The engraving represents a first order fixed light apparatus, about 6 feet in diameter, and 10 feet high. F is the flame (and the focus of the apparatus); L is the lamp, supported on the pedestal, K K; E E is the central part of the lens, embracing the same portion, as the eight polygonal lenses previously described, and it will be seen by the outer edges that the section of the belt is the same. It is separated into distinct panels by diagonal framework, N N. These diagonal divisions were first suggested by Alan Stevenson, and their obvious use is to cross the flame at an angle instead of a perpendicular line, which would obscure the light throughout its length. The upper series of thirteen zones, A B C, and the lower of six zones, H I, are described presently.



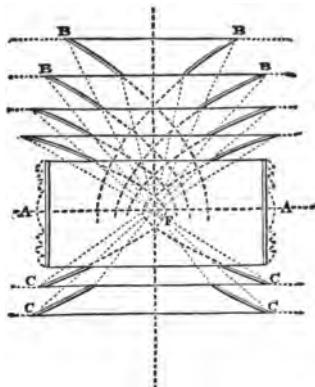
View of a first order fixed Dioptric Light, with upper and lower refracting zones.

## DESCRIPTION OF LIGHTHOUSES.

As the systems we have been explaining will only act upon those beams which are comprised within the angle contained between the focus and the upper and lower edges of the central lenses, or about three-eighths of the whole quantity of light, it becomes necessary to economise, as far as possible, those portions which are above and beneath this portion of the apparatus.

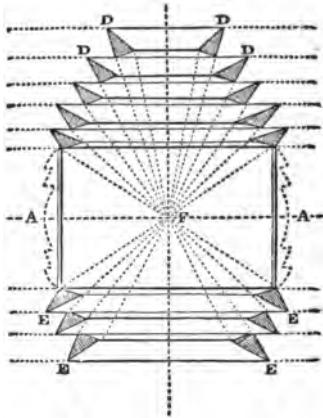
In the early apparatus, the upper portion consisted of a series of catoptric zones, formed of separate pieces of silvered concave glass, arranged in such a manner as to reflect horizontally the beams thrown on to them. The degree of curvature and inclination to the plane of the system was determined, as in the case of the parabolic reflector, by considering their section to be a portion of such parabolas as would, if carried around the focus, form perfect reflectors, as will be readily understood by the subjoined diagram, where the dotted lines show the form of that portion of the parabola not comprised in the catoptric zone. The same applies to the lower portion of the system.

In the small or harbour lights, instead of these reflecting mirrors, another plan was first used by M. Augustin Fresnel, that of catadioptric rings, composed of glass, which *totally reflected* the rays thrown on to them. The action of these zones, or rings, is explained in the second diagram.



CATOPTRIC ZONES.

F, the focus of the system and the situation of the light; AA, principal lenses; BB, upper reflecting zones; CC, lower reflecting zones. The parabolic curves, of which the section of the zones is a portion, is continued round the focus in the dotted lines.



CATADIORPTRIC ZONES.

F, the focus, and AA the principal lenses, as in the adjoining diagram; DD, the upper system of totally reflecting prismatic zones; and EE, the lower portion of the system. The action of these prisms is explained in the next diagram.

The first example of this catadioptric apparatus was constructed by M. Tabouret, who was connected with the French Commission des Ponts et Chaussées, a short time before the death of M. Augustin Fresnel.

One of the most important improvements which took place in pharology was the adaptation of this accessory on a much larger scale than had previously been supposed possible, by the suggestion of Mr. Alan Stevenson, who, in his construction of the Skerryvore Lighthouse, used every means to render this important edifice most complete in every respect. In conjunction with M. Leonor Fresnel and M. François, Jun., the constructors, this apparatus was added to the lower portion of the Skerryvore dioptric light, consisting of five glass zones, which replaced in the ordinary system four horizontal zones, each composed of thirty-two concave mirrors. In a fixed light apparatus of the first order, nineteen of these catadioptric zones replace eleven reflecting zones.

"Nothing can be more beautiful," says Mr. Alan Stevenson, "than an entire apparatus for a fixed light of the first order. It consists of a central belt of refractors, forming a hollow cylinder, 6 feet in diameter and 30 inches high; below it are six triangular rings of glass, ranged in a cylindrical form, and above a crown of thirteen rings of glass, forming by their union a hollow cage, composed of polished glass, 10 feet high and 6 feet in diameter. I know of no work of art more beautiful or creditable to the boldness, ardour, intelligence, and zeal of the artist."

The divergence of the polyzonal lens is much less than that of the parabolic reflector, being about  $5^{\circ} 9'$ , owing to the smaller angle subtended by the flame upon the inner surface of the lenses. From this cause, the flash in a revolving light is but of short duration, while that from revolving reflectors lasts much longer, from their greater powers of divergence. To compensate for this, the light from the lenticular apparatus is, within a certain distance, continuous; the upper and lower portions of the system giving a steady light.

**FIXED AND FLASHING LIGHTS.**—There is one character of light in the French (and other) systems which is peculiar, and requires special mention, as it does not appear to be properly understood by many, and is frequently an important distinction. This, the *feu fixe varie par une eclat* of Fresnel, has this appearance in a light whose period is four minutes: first, a bright fixed light, for above  $3\frac{1}{2}$  minutes; then a short, but not total eclipse, for about 10 seconds; then a very bright flash, of much greater intensity than the preceding fixed light; then another short eclipse, and then the fixed light as before. In the larger apparatus the distinction between this and an ordinary revolving light is well marked by the intensity of the fixed light between the brighter flashes, and also especially by the short eclipses preceding and following the bright flash. In the smaller apparatus the bright flash is not so well marked; but the short eclipses will be a clear index to its character.

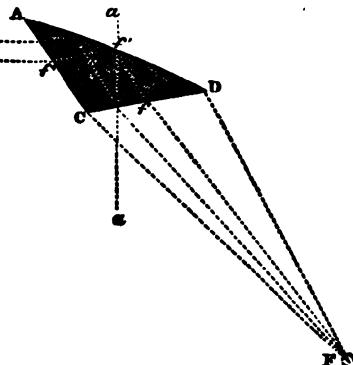
There are different modes for producing this effect.

Fresnel's plan was to have an ordinary fixed light apparatus, around the outside of which two revolving panels of refractors passed in regular succession. These panels consisted of *vertical* lenses, similar to the *horizontal* central belt. They thus received on their inner surface all the light which issued from the central lamp through the fixed lens on the angle which they intercepted, and which each refracts into *parallel* beams to the direction it faces as it revolves. Therefore, instead of the rays passing in all directions on that azimuth, a portion of them are collected and concentrated in one direction for the bright flash; and the angle between this bright beam and that emanating from the fixed portion of the apparatus is that which forms the eclipses. The upper and lower zones, of course, are those which maintain a constant light; so that the eclipses in this, as well as in most other lenticular lights, is not total within short distances.

Sometimes the flash is coloured *red*, as in the light on Chausey, Vièrge Island, Point d'Alpréch, &c.; and in a few cases *green*, as in some of the Turkish lights, &c.

In another method of producing this effect, constructed by M. Letourneau, the necessity for using two lenses is avoided; and, consequently, the loss of light inevitable in the absorption of a portion in its passage through the glass. In the central portion of the apparatus are four of the polyzonal lenses, similar to those figured A A, on page 21; alternating with these are four portions of a fixed light apparatus, shown by the horizontal belts, E E, in the lower figure, on page 21. For a fixed light, of course, these horizontal belts are carried all round; and the light appears as a vertical stripe of the breadth of the flame from the top to the bottom of the belt. In the polyzonal lens the light appears to cover its whole surface, and is only visible when in front. The whole apparatus is made to revolve by machinery, and the appearance is as above described; first, the fixed light from the portions on either side; then a short eclipse due to the light being diverted by the great lens; then the full blaze of the lens for 8 or 10 seconds; then another eclipse, and so on.

It is considered by many, including the great Alan Stevenson, that the fixed and flashing light is not altogether a desirable variety, its appearance being too much like the revolving light; in fact, in our official lists they were always set down as revolving lights, till within the last few years.



A D C will represent a section of this glass zone, which is so placed with regard to the focus, F, that a ray falling upon it at f will be at such an angle on D A, that instead of passing out, it will be totally reflected from that point of incidence, as f f', and will finally assume the direction, f' f", of a right angle to the normal, a a', as required. This angle, in passing from glass into air, is about  $41^{\circ} 49'$ , and a greater angle of incidence gives a reflected ray. In the largest zone, the radius of the arc (the reflecting surface), D A, is equal to 28'46" feet, and the angle, D C A, is equal to  $117^{\circ} 20' 42''$ .

In coast lights, where usually the light is not required all round the horizon, that is over the land in the rear, there would be a waste of the light from the great lamp, which, of course, suffices to illuminate the whole horizon. In the reflector light this is avoided, as a smaller number of lamps is used. But in the dioptric lights the light was economised by the use of spherical mirrors placed on that side. These spherical mirrors, usually of silvered copper, were formed to a curve, whose radius is equal to that of the focal lenses they are applied to, having the position of the flame as a centre. They thus reflect the rays back again through the flame upon the lenses on the opposite side. Flame, being perfectly transparent, there is no loss of power in this.

This method of economising light was practised, as aforesaid, by Mr. Thomas Rogers, about 1788; he used blown glass spherical segments made into mirrors. Mr. Alan Stevenson proposed it in 1834, and MM. François and Letourneau have made them by grinding the glass to the focal curvature.

There are very many other considerations in the economy of Lighthouses that deserve notice, but which would unduly extend this brief description. The excellent works of Mr. A. Stevenson, and of his brother Mr. T. Stevenson, will afford much instruction.

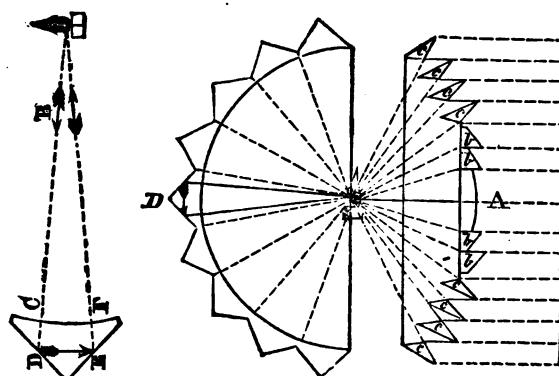
**The HOLOPHOTAL SYSTEM.**—As far as they were applied, the catoptric and dioptric systems acted perfectly; but still there was some waste of light, caused in one direction by the divergence of the instruments, and, in another, by their construction. The consideration of this loss of power led to the next steps in the science of pharology; since that period, some new arrangements have been proposed, by which some of the disadvantages of the dioptric system have been partially avoided. M. Letourneau proposed lengthening the duration of the great flash of the dioptric lens, by dividing it into two portions, and setting each half at a slight angle outwards; this would produce the desired effect, but it must be at the expense of brilliancy. Several other minor improvements, also, have been suggested, but the main features of the system have remained unaltered.

The waste of light in the catoptric is that angle comprised between the angle formed by the lips of the reflector and the flame, and the horizontal ray which strikes the outer edge of the reflector. It is a part of the angle  $P a f$ , in the upper part of the diagram on page 15. That portion of the light which passes upwards is, of course, lost for useful effect; the other portions may be considered as serviceable. In the year 1849, Mr. Thomas Stevenson, son of Robert brother of Alan Stevenson, proposed some arrangements which obviate this loss, upon what is termed the *holophotal system*, from two Greek words, signifying "whole light."

Proceeding upon the assumption that the whole of the emitted rays from the central lamp may be made to assume the horizontal direction, Mr. Thomas Stevenson has made several most excellent arrangements, which, however, we cannot fully describe here. The simplest form is that of an hemispherical metallic reflector, in the focus of which is placed the lamp; before the lamp

is a refracting polyzonal lens, of such a section that the whole of the direct rays from the lamp, and the reflected rays from the posterior reflector, are parallelized on their emergence.

Carrying this principle to greater refinement, and as it was found that the totally reflecting glass prisms were effective compared with metallic reflections as 140 to 87, a hemispherical arrangement of glass is proposed, which, by refraction and total reflection, produces the same result as the metallic hemisphere. The section adjacent will explain its action. In front of the flame, in the centre, is placed a holophote, A, consisting of a central lens,



Sections of Mr. Thomas Stevenson's hemispherical mirror, consisting of totally reflecting prisms as at D, of which an enlarged section is shown at D C F E, throwing all the rays back through the flame on to the holophotal lenses at A, which then send them in the direction D A in a horizontal beam, and thus economises the whole of the light.

attached to which are the two concentric rings, as in the ordinary polyzonal lens. Outside of these is a series of four circular catadioptric rings, whose action is described on page 22. These will horizontalize all the beams which fall from the lamp on their inner face. For the portion of the light behind the flame, a hemispherical glass mirror is placed, consisting of a concentric series of circular prisms, the section and action of which are shown in the smaller cut (page 24). The ray, B C, from the central flame, after passing through the lens, strikes its exterior face at D, is reflected to E, then again totally reflected at E in the direction of F, as indicated by the arrows; so that every ray passing behind the light is received on this diacatoptric mirror, and made to revert through the flame (which is transparent), and thence, in the same direction, on to the holophote in front of it. Thus every portion of the light is economised.

The action of these totally-reflecting cata-dioptric prismatic zones—a long array of words, which, however, are expressive—may be explained by a very familiar experiment. Place a stick of sealing-wax, a pencil, or any other substance, in a sloping direction from you, in a tumbler of water. Raise the tumbler above the level of the eye, until, at a *certain angle*, you will see the image of the sealing-wax, &c., *totally reflected* under the *upper* surface of the water.

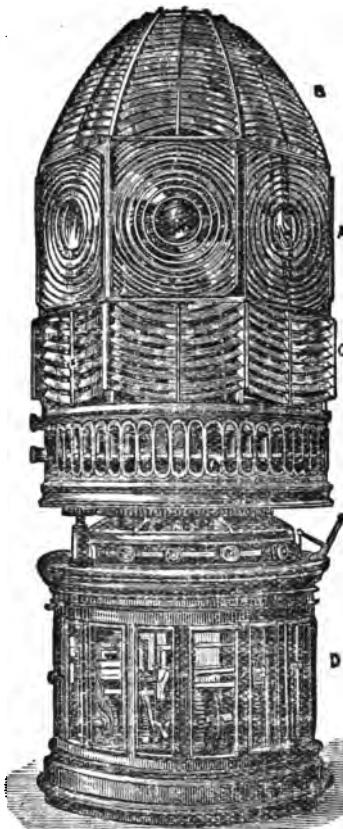
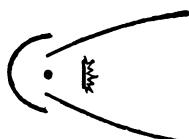
The formulae for the construction of this ingenious apparatus were calculated by Mr. William Swan, F.R.S.E. The glass refracting mirror has one advantage over a metallic mirror in its powers of radiation, as in an experiment the heat in the interior of the apparatus was so great as to cause the oil to boil; an inconvenience, however, which was afterwards obviated mechanically. Very numerous other applications of his principle are also proposed.

The ordinary paraboloidal reflector is rendered holophotal, as follows:—A small portion of the back of the reflector is cut off, behind the parameter, the perpendicular line which passes through the focus, F (diagram on page 15); for this is substituted a portion of a *spherical* mirror of the same focus. In front of the flame a lens

with three diacatoptric rings is added. The action of the spherical reflector is to return all the rays impinged on it back through the flame, and thus on to the posterior sides of the lens and diacatoptric rings.

Therefore, all the rays which emerge from the lens, &c., will be horizontal; and the remainder, those impinging on the paraboloid, will also be reflected in the same direction. Peterhead light (1859) is on this principle. The Horsburgh Lighthouse, in the Strait of Singapore, is fitted with nine such holophotal reflectors; three on each face of a revolving frame, each side of which, it is said, gives as much light as five reflectors of the ordinary kind. This was completed in 1851. Another one, on a large scale, is at Hoy Sound, Orkney.

Fresnel's revolving light system, as at work in the Skerryvore and the Cordouan, with its beautiful but complicated upper system, is rendered holophotal by a very simple means. The zones above and below the main lenses act in the same way as the central lens; that is, these zones, being made horizontal, are made of segments of circles concentric with the centre of the great lens beneath and above them; and by the whole apparatus revolving, nearly the whole of the light is projected horizontally in the eight directions of the octagonal prism; and, therefore, when each face is presented to any point, the whole of it is luminous. In those lenticular



View of the holophotal revolving lens apparatus for the Great Bassas Rocks, Ceylon. A, the central polyzonal lenses, as shown on page 20. B and C, the upper and lower holophotal rings. D, the pedestal, containing the machinery by which the whole apparatus is made to revolve.

arrangements, which had the upper and lower zones horizontal, or the same as in the fixed light, these upper and lower zones showed only a vertical strip of light of the same breadth as the flame, and this is the continuous light which is visible between the flashes.

The beautiful holophotal adaptations have been established at several important localities. The magnificent light at Whalsey Skerries, Shetland, constructed by Messrs. Chance, of Birmingham, and those on Lundy Island, St. Abbs Head, Flamborough Head, the Red Sea, &c., have examples of this extending system.

Mr. Thomas Stevenson has constructed a holophotal arrangement which he calls an azimuthal condensing light, by which the whole light is used down a narrow channel: there are examples at Oronsay and Kyleakin (1857), West of Scotland. Another most ingenious appliance is that at Stornoway, Lewis Island, by which a beacon on the dangerous Arnish Rock is made to show an *apparent* light, reflected by a peculiar apparatus from a light on the Lighthouse on the adjacent point.

As regards the history of the holophotal system, we may refer to Thomas Rogers's plan (1788), before mentioned. Sir David Brewster also proposed an arrangement of lenses, as a burning instrument, in 1812; and the same for Lighthouses, in 1823. Mr. Alexander Gordon, C.E., also constructed a combination of lens and reflector, which economised much of the stray light, in 1847. The carrying this system into full practice, by Mr. Thomas Stevenson, is as above related.

There is one other important portion of the Lighthouse which requires our notice—the lantern or light-room. In the early days of the system, this consisted of a cylinder, formed of massive wooden frames, holding small but thick panes of plate-glass, consequently these window bars and supporting posts so much interfered with the light, that in some directions it was almost entirely obscured, and this has been the case in a much modified degree, in some places, nearly up to the present time, and very greatly interfered with the experiments with gas made at Howth Baily Lighthouse. This defect was greatly remedied by Mr. Alan Stevenson, at the Skerryvore, by the introduction of the diagonal framework of the lantern. The glass was made in triangular panes, fixed in gun-metal framework, which, although necessarily massive, by crossing the light diagonally, did not obscure the whole of the perpendicular beam, as was the case with the older light-rooms. This drawback has been reduced to a minimum by Mr. James N. Douglass, in his system, which consists of a series of lozenge-shaped panes, supported by steel frames, bent to the curvature of the lantern, and thus presenting only the thinnest possible edge towards any point of the horizon. These spiral bands hold the pane of glass, which is also bent to the curve of the light-room, and accurately ground to the size of the frame; and the lantern is thus built up of separate elements, which unite to form a cylinder of the strongest character, and the framework of which, from a short distance, will be entirely invisible when seen immediately in front.

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A first order lenticular apparatus is one of the most beautiful objects in the world. It is a combination of elements, nearly 12 feet high and 6 feet in diameter, constructed with the utmost skill and refinement, and involving in its structure some of the highest principles of applied science.

A first order light apparatus, as above said, is 12 feet high and 6 feet in diameter; and the cost of the lenses alone varies from £1,288 to £1,536; or, with the cost of all apparatus, and light-room or lantern, £2,488 to £2,984.

A second order light apparatus is 4 feet 7 inches in diameter; the lens costs from £788 to £1,131, or altogether, £1,624 to £2,187.

A third order apparatus, diameter 3 feet 3 $\frac{1}{2}$  inches, costs £378 to £704, or altogether, £882 to £1,456.

A fourth order, or harbour light, is 19 $\frac{1}{2}$  inches in diameter; costs from £157 to £255 for the lenses, or £329 to £427 complete.

A fifth order harbour light, 14 $\frac{1}{2}$  inches in diameter, costs £103 to £195, or £257 to £349 complete.

The sixth order, or smallest size of harbour lens light, is 11 $\frac{1}{2}$  inches in diameter; costs about £70, or complete £216.\*

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\* These prices, which are common to nearly all manufacturers, are taken from the Tariff of Messrs. Chance, Brothers and Co., Birmingham.

In the early days of the lens lights we were entirely dependent on the French for their construction. The superior character of the St. Gobain and Premontrè glass, and the appliances of MM. Soleil, Frangois, Letourneau, Sautter, &c., kept them in possession of nearly all the construction of lenses in use. The only exceptions, in our country, were those made by Messrs. Cookson, of Newcastle-upon-Tyne, who, about 1836, made some apparatus, as that of Hartlepool, &c.

M. Degrand, of the French Lighthouse Commission, has introduced another process for making the lenses, by forming them of thin sheets of moulded or *cast* glass. This is in use in the beacon light of Walde Point, near Calais, but has not been made much use of. Since 1855, Messrs. Chance, Brothers, of Birmingham, have become the great manufacturers of dioptric apparatus, and a very great number of splendid apparatus have been placed by them in every quarter of the globe since that period. The great improvements both in the quality of the glass, as well as in the elaborate refinement of the optical principles involved, have been acquired through the talent of Mr. James Chance. It would extend this introduction far beyond its limits if all the varied adaptations of the dioptric principle to each locality were alluded to. In very many cases where there was much loss of light, each stray beam is now intercepted and made to pass in a useful direction, at times to intensify a coloured ray, as is the case with the splendid red beam which is sent from the Great Ormes Head Lighthouse, or in adding to the strength of the main light in every instance. Since the period above named, this great firm have set up between 400 and 500 apparatus of every class.

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## CHAPTER IV.

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### GENERAL REMARKS.

It is very important that the distinctive character of different Lighthouses, and especially of those near to each other, should be plainly marked, and easily recognised. It might be supposed that this was readily and well done, by the alternation of fixed and revolving, at different periods, flashing or double, and even treble lights; but very numerous accidents demonstrate that mistakes frequently occur. During fine and clear weather there is not any difficulty, with ordinary caution. It is the thick haze, snow and storms, driving scud, and all other embarrassments, which, while they tend to throw doubt on the ship's reckoning, also make it difficult to approach an unknown Lighthouse without running into danger. Therefore, any distinction, by which one light can be instantaneously distinguished from another, is most useful. The difference in the aspect between the reflector and lens light is one of these, at the sailor's command.

At long distances (say above 10 miles) the flash from the revolving light from the reflector has a sensible disc, and will last a considerable time, 12 or 14 seconds, if the revolution is 1 minute; that from the lens light will be whiter, more star-like, and will not last more than 7 or 8 seconds. Another distinction of the latter is, that the light is frequently, but not always totally extinguished between the flashes—the upper and lower zones keeping constantly illuminated. This secondary light, at favourable times, is visible as far as the horizon of the place, and from 8 to 12 miles, according to the size of the apparatus, in ordinary weather. This is a marked distinction between the two systems, as the eclipse is total from the reflectors, even at short distances. But it must be remembered that the holophotal system has also nearly total eclipses.

The distinction between the fixed lights, on either system, is not so well marked. The lens equally distributes the light, which is equally bright in all directions. On the other hand, the reflector light is brightest when immediately in front of the reflector, so that a vessel sailing past, when very distant, will find that the light at times gets fainter, till a short distance further brings her into the force of the next reflector.

Very much has been written upon the comparative merits and economy of the two systems. Perhaps the difference at times has been over-rated. At all events, it is certain, that for fixed lights the advantages are all on the side of the lens, unless the arc illuminated be a small one.

The *harbour and tide lights*, so numerous in the ensuing lists, have not been specially alluded to

in the previous description. Where they partake of the catoptric or dioptric character, it will be understood from what has been said; but in many cases of pier, or small tide lights, they are simply the ordinary street gas lamp, with a coloured pane to distinguish it, or even the interior hand-lamp.

In many cases, in our own country, these local lights are not worthy the position they occupy; in others, all improvements of construction and efficiency have been used. In most continental countries, as in France, Spain, &c., these local harbour and tide lights being all under the Government direction, they may all be included in the descriptions before given, as applied to the primary lights.

There is no regular system in the tide or harbour signals used in the United Kingdom; however desirable uniformity may be in this and other respects, the diversity of use is of less importance in practice, as the peculiar character of the signals are given for each place, and will be sufficient guide. More extended directions, in connection with these signal lights, must be found in the special Sailing Directories, and the charts they elucidate.

The *distance* to which the principal lights are visible is generally limited by the horizon. There is no doubt but that they might be seen to very great distances, even 60, 80, or even 100 miles, if sufficient elevation could be gained to view them from. It is considered by many that 250 feet is the maximum height necessary or advisable, which will give an horizon 18 miles distant; and, by ascending the rigging, to 20 miles off. When a light is unduly elevated it is very liable to be obscured by clouds or fogs, and it is frequently a great detriment to those which are so. In the Tables, the height of the flame above the highest tide high-water level is given, so that it is the minimum range of the light; to this elevation 10 feet is added for the height of the deck of the ship above the sea. Besides the increased distance to which low water will cause the light to be seen, the effect of refraction will also sometimes increase their range.

The height of the tower, from base to summit, is frequently given, as it affords a means, by angular measurement by the sextant, of ascertaining the distance of the tower. In the Tables, where the height of the Lighthouse is given, it is to be inferred that it is from base to vane; but the elevation of the light is that from the summit of high water, and thus the vane above the ventilating ball is of varying height, according to the size of the lantern. Approximatively it is as follows:—

1	Order light, from the centre of the light to the vane, about 15 feet to be added.				
.	"	"	"	11	"
3rd	"	"	"	10	"
4th	"	"	"	8	"
5th	"	"	"	7	"
6th	"	"	"	6	"

Many of the Lighthouses are handsome and commanding structures; and, generally, all modern erections are made almost as available for day marks as their lights are for night. In many cases they are distinguished by some peculiarity, noticed in the lists, as mentioned on page 6.

When the light is dipping on the horizon it flickers greatly, especially in rough weather, an effect owing to the waves on the intervening horizon. The lights also appear *yellow* when in the neighbourhood of large towns, as Liverpool. This is owing to the smoke of the town. Observations on this point is recommended, as distant lights on land appear quite bright and white during and preceding rainy weather; while a yellow or reddish tinge indicate, almost certainly, a continuance or approach of fine weather.

It may readily be comprehended, that if the refinement of economising the light were carried to so great an extent without vertical divergence, the effect would be to send forth the light in such a thin disc that it would be invisible to a distant ship, unless she were exactly on that part of the ocean which this thin disc of light touched; some aberration is, therefore, absolutely necessary.

But this point has also been urged by Mr. Thomas Stevenson (in 1851), as one that might be made useful, as a light might be made to be visible only over a dangerous reef, or in a safe channel. Therefore, a ship approaching such danger would be warned when to put about by its becoming visible, or by losing sight of it. It is said that a light of this character was in use at Beachy Head, but the particulars have not been preserved.

It has frequently happened that a Lighthouse on a perpendicular cliff has not shown the light

to ships passing close underneath, and in some cases with very disastrous consequences. In these circumstances it is almost imperative that the light should have a high degree of divergence in the lower portion of the apparatus. In the beautiful new apparatus for the electric light at the South Foreland low Lighthouse, one-half of the dioptric zones are so inclined as to show the light to a lower angle to accomplish this effect. A very useful application of this has been made in some few Lighthouses (as in Ballycotton, South Ireland), of having the lower panes of the light-room made of red glass, so that a ship approaching too near the land will be warned of it by the light changing to red.

The masking of lights for the purpose of clearing the navigation of different channels is effected in the same way as the ships' quarter-lights are, as is most usefully carried out in Liverpool Bay. A different coloured ray is also most serviceable, as the bright ray from the Maplin, which points out a turn in the channel, or in other cases where the change of colour can be made a beating mark. All these points, however, are familiar to the sailor. In the preceding notices are given only the leading features, sufficient to show what the general principles are as applied to our subject. But it may be affirmed, that almost every variety of circumstance and requirement in the Lighthouse system has been the subject of profound study; and so numerous are the plans and inventions in connection with all branches of them, that the mere enumeration of them would be a bulky list.

The English lights are lit at sunset, and extinguished at sunrise. The Scotch have made a saving by doing so at darkening and dawn. In all cases of the public lights, of all countries, the strictest supervision and most careful management are used to render them in the highest degree efficient.

The ancient Corporation of the Trinity House of Deptford Strand has had, as is well known, the charge of the British Lighthouse system. This is one of the very few institutions (if there be another) which dates from a mediæval period, which has well preserved its importance and useful character, through all changes, to the present day. That it has been so, the last Report of the Royal Commission, 1861, will testify.

"The above evidence then goes to show that the quality of British lights (speaking generally) is equal to the quality of lights in any part of the world; and the testimony is especially valuable because the men who give it are mariners—those best able to judge of the appearance of the light; and, as appears from their evidence elsewhere, generally knowing nothing about the manner in which the light is produced. As one witness remarked, 'They don't know the ropes,' C. and D. (catoptric and dioptric); but most of them think that first-class British lights (speaking generally) are as good as most first-class lights which they have seen abroad, and better than many."

The Trinity Corporation, which has developed our English system, under the advice and assistance of the most eminent engineers and philosophers of all periods, existed in the reign of Henry VII., as a respectable Company of Mariners in the College at Deptford, having authority by Charter to prosecute persons who destroyed sea-marks, &c.; and Henry VIII., in the sixth year of his reign, May 20, 1514, formed them into a perpetual Corporation, by the style and title of the "Master, Wardens, and Assistants of the Guild or Fraternity of the most glorious and undivided Trinity, and of St. Clement, in the parish of Deptford Strand, in the county of Kent."

This Charter was confirmed and altered by Edward VI., Queen Mary, Elizabeth, and James I. The Charter of James I. settled this constitution of the Corporation, and such it continues. The Charter was dissolved in 1647, but was renewed by Charles II. on the Restoration, and the disposal of the funds was settled partly for charitable purposes. The Charter was surrendered to Charles II., and renewed by his successor in 1685; and the charitable uses of the funds of the Corporation were again settled. These funds were derived from various charges, such as pilotage, lastage, loadmanage, ballastage, &c.

The interest which the Trinity Corporation represented having, by the extension of commerce, grown into great magnitude, the Government interfered and altered some of their privileges at different periods, especially in 1854, when the Board of Trade partook of the supervision.

In *Scotland*, the Commissioners of Northern Lighthouses are the acting body, and were incorporated by the Act 38th George III., c. 58. They have had the benefit of the special services of the family of Stevensons, often noticed previously.

In *Ireland*, the Ballast Board of Dublin acts in all Lighthouse matters. (See the 23rd George III., c. 19.)

## DESCRIPTION OF LIGHTHOUSES.

Besides these three public bodies there are very numerous local authorities which deal with local lights. The principal among these are the Liverpool Board, the Trinity Houses of Newcastle, Hull, &c. The number of these separate bodies is very great; as, for the 402 Lighthouses in Great Britain, there were, at least, 174 different authorities to direct them.

The Colonial lights are chiefly under the control of the Board of Trade.

Like many other important interests, this has suffered from over legislation, as the Chairman of the Commission of 1861 says,—“It is difficult to discover the necessity for that cumbersome system which now exists, viz., *a single government* (the Board of Trade) for Lighthouses in the British possessions abroad; *a double government* for the Lighthouses under the Trinity House; *a triangular government* for the Scotch Lighthouses and for local lights in England; and *a quadrilateral government* for the Irish Lighthouses and for local lights in Scotland and Ireland—a system which can scarcely be expected to find favour in the present day.”

In *France*, the Lighthouse service is under the ministry of Public Works, and a special Commission, called “Commission des Phares;” which body consists of naval officers, marine engineers, hydrographers, members of scientific bodies, and other gentlemen, distinguished for their scientific attainments in various professions, all of which have to do with branches of science connected with coast illumination. The general conduct of the service is under an officer called Directeur Général des Phares, who is an engineer, and has other engineers under him.

In the *United States* of America, the lights are under one Central Board, constituted in 1852, and composed of a member of the Government, engineer, officers, and officers of the army and navy, and civilians of high scientific attainments.

In *Sweden*, the lights are under the Admiralty, and managed by a director and officers who have military rank, and engineers.

In *Norway*, the service is under the Royal Marine Department.

In *Turkey*, it is under the Admiralty; and the system is now in course of development.

In *Spain*, the system of administration is the same as in *France*; and the full development of the system is now in progress. The lights, &c., are under the department of Public Works, and under a permanent Commission composed of engineers of superior rank of the Corps of Roads, &c., and naval officers; and the captains of ports are instructed to suggest improvements and report on the lights.

In *Denmark*, the service is under the Ministry of Marine.

In *Russia*, the superintendence is dependent from the Hydrographical Department.

In *Holland*, the management of lights, buoys, and beacons, rests with the Minister for the Marine.

In *Belgium*, the construction of Lighthouses is under the Minister of Public Works; but when built they are handed over to the general direction of the Navy, which is under the Minister for Foreign Affairs.

In *Austria*, the superintendence of all the Lighthouses, buoys, and beacons, belongs to the Imperial Royal Admiralty. The Deputies of the exchange, at Trieste, attend to Lighthouses—their erection, management, collection of dues, &c.

In conclusion, an inspection of these most useful monitors to the sailor is recommended to him. He will then see that the beauty of the apparatus, the discipline, order, cleanliness, and perfection of everything connected with them, are not exceeded by their utility.

## VISIBILITY OF LIGHTS.

The question of the distance to which lights can be seen is one of great importance to the mariner, and is one attended with some difficulties. In the Tables, the elevation of the focal plane of the light-room above *high* water level is given, and the distance of the sea-horizon due to that elevation, is stated to be the distance it may be seen from the deck of an ordinary vessel, 14 feet above the sea.

This calculation is subject to the ever-varying amount of refraction; and, therefore, this distance is the *minimum* to which it ought to be distinctly visible in ordinarily clear weather.

But from the very great power of the larger light apparatus, the range is so great, that, under favourable circumstances, and from great elevations, as from the mast-head, or from a distant hill, they would be clearly visible at 60 or even 100 miles distance; and the greater the distance, the more it is affected by refraction at the small angle it subtends with the visible horizon. It must be sufficient here, then, to state that the ranges given are the *shortest* distance to the point where the light will dip below the ship's horizon.

The following Table, given in the grand work on the Skerryvore Lighthouse, by Alan Stevenson, Esq., will give the elements of these calculations, and may prove serviceable in other circumstances than those to which the Tables can only refer.

TABLE.

Distances at which objects can be seen at sea, according to their respective elevations and the elevation of the eye of the observer.

Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.	Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.	Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.
5	2.958	2.565	70	11.067	9.598	250	20.916	18.14
10	4.184	3.628	75	11.456	9.935	300	22.912	19.87
15	5.123	4.443	80	11.832	10.26	350	24.748	21.46
20	5.916	5.130	85	12.196	10.57	400	26.457	22.94
25	6.614	5.736	90	12.549	10.88	450	28.062	24.33
30	7.245	6.283	95	12.893	11.18	500	29.580	25.65
35	7.826	6.787	100	13.288	11.47	550	31.024	26.90
40	8.366	7.255	110	13.874	12.03	600	32.403	28.10
45	8.874	7.696	120	14.490	12.56	650	32.726	29.25
50	9.354	8.112	130	15.083	13.08	700	35.000	30.28
55	9.811	8.509	140	15.652	13.57	800	37.416	32.45
60	10.246	8.886	150	16.201	14.22	900	39.836	34.54
65	10.665	2.249	200	18.708	16.22	1,000	41.133	36.28

## EXPLANATION OF THE TABLES.

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### NAME AND CHARACTER OF LIGHT—First Column.

The principal coast lights are given in capitals, as **N. FORELAND**. Secondary lights in smaller characters, as Shoreham Harbour. Tide lights in italics, as *Ramsgate*. The character of the light follows its name.

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### GEOGRAPHICAL POSITION—Second Column.

The latitudes and longitudes here given are presumed to be accurate, within less than 1', for all the coasts of the Atlantic Ocean and its Seas. In other parts of the world it may vary somewhat more; but there is no great discrepancy, such as would lead to serious consequences, by taking any one of them as a point of departure.

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### DESCRIPTION OF THE LIGHT, &c.—Third Column.

In this, any peculiarity of the light, or period of a Tide light, is noticed; and also the direction of double lights. In many cases the bearing of two lights when in one will lead clear of a danger, as the South Foreland in one, W. by N., clears South end of the Goodwin, &c. Special directions will explain this. The limits of visibility of the lights are given by compass bearings from the light, and not those from seaward.

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### DESCRIPTION OF APPARATUS—Fourth Column.

In this, the signs used to indicate the sort of light apparatus in use in each case:—

- signifies a catoptric, or reflector light.—(See page 14, &c.)
- 1a, 2, 3 b, &c., indicate dioptric, or lens lights, the figure showing the order or size, 1st, 2nd, 3rd, to 6th order.—(See page 19.)
- a, a fixed lenticular light.—(See page 21.)
- b, a revolving lenticular light.—(See page 25.)
- c, a fixed and flashing light.—(See page 23.)

These figures and letters will serve to explain the peculiarities of the Lenticular System, as in operation therein.

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### HEIGHT ABOVE HIGH WATER.—Fifth Column.

This gives the height of the *flame* in feet above the highest tide level, consequently it is its minimum height, and is increased by the tidal range of the place. The height of the Lighthouse itself, from base to summit, is given sometimes in the third column.

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### VISIBLE IN MILES—Sixth Column.

This gives the minimum distance to which the light can be seen, in clear weather, from a height of 10 feet above the sea level. But in the case of the principal lights this but imperfectly represents their range, as they could be seen at any distance attainable by increased elevation. In the use of *coloured* lights this range is given according to their presumed power.

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### YEAR ESTABLISHED—Seventh Column.

The date of the first exhibition of the light is usually given; but its character, &c., may have been frequently changed in the interval.

# LIGHTHOUSES.

1879.

## ENGLAND.

## Thames Mouth.

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>RIVER THAMES</b>						
Northfleet	• •	Bright light in fairway of Northfleet Hope and Gravesend Reach; red over anchorage in Gravesend Reach and Broadness. ....	○   ..   ..	1859		
Hope Point Fort	.....	A single lamp for colliers.....	..   ..   ..	1852		
Mucking Flat	.....	On piles; bright East of N.E. by E., red to W.; also red ray toward Blyth buoy to S. $\frac{1}{2}$ E. and red N. of E.S.E. to clear Scars and Chapman Head. Fog Bell .....	2a   40   11	1849		
Chapman Head	.....	On piles. Bright in fairway channel, red over Leigh Middle to N. of S.E. by E. $\frac{1}{2}$ E. A fog-bell .....	2   40   11	1849		
Southend Pier-head	.....	Red fixed light.....	..   ..   ..	1840		
Sheerness	.....	Red gas lt. on N.W. face of fort on Garrison Point. Not vis. S. of N.N.W. bearing .....	..   60   5	1859		
Queenborough	.....	1. Two red leading lights on pier..... 2. A bright lt., vis. through 45°, is shown from beacon on Queenborough Spit, in 6 ft. water, 80 yds. S.W. from Spit buoy .....	6a   30   3	1876		
Whitstable	.....	Bright fixed light on tall chimney .....	●   56   9	1860		
<b>NORE LIGHTVESSEL</b>						
One br. rev. lt. $\frac{1}{4}$ min.	51 29. ○ 48.	In 3 $\frac{1}{2}$ fathoms at East end of the Nore Sand. Gong; warning gun .....	●   38   10	1732		
Girdler Lightvessel	51 29. I 7.3	In 3 $\frac{1}{2}$ fathoms W. Girdler Sand at W. entrance of Princes Channel. Gong; warning gun...	●   38   10	1848		
One br. rev. lt. $\frac{1}{4}$ min.						
Princes Channel Lt.-ves.	.....	In 3 $\frac{1}{2}$ fathoms N. side of channel, between Girdler and Tongue Lightvessels. Gong; warning gun.....	●   38   10	1856		
One red rev. lt. 20 secs.						
Tongue Lightvessel	51 29. I 19.	In 10 fms. at East Tongue Sand; one red ball. Lts. at unequal heights. Gong. Warning gun. (Run into and sunk in July, 1877. Wreck marked by lt.-ves., 1 $\frac{1}{2}$ cable N.N.E. from it, and buoy S.S.W. from it. Keep out-side buoy and lightvessel) .....	●   38   10	1848		
Upper br., lower red, fixed lights						
Margate Pier	51 24. I 23.	Column at W. end of Pier; also a small green light on Jarvis Jetty .....	●   85   10	1829		
One red fixed light						
Mouse Lightvessel	51 32. I 0.	In 4 fathoms, at West end of Sand. Gong; warning gun.....	●   38   10	1836		
One green rev. lt. 20 s.						
Maplin Pile Lighthouse	51 35. I 3.	Painted red; lt. not vis. over the sand; a br. ray to S. $\frac{1}{2}$ W. betw. Girdler Lt. & Shivering Sand buoy. Br. lt. shown 13 ft. below main lt. to S.E. by E. $\frac{1}{2}$ E. over Spit buoy. Fog-bell .....	2a   36   10	1838		
One red fixed light						
Swin Middle Lightvessel	51 36 5 I 5.5	In 3 $\frac{1}{2}$ fathoms at West end of Sand. Gong; warning gun.....	●   38   10	1837		
One br. rev. lt. 1 min.						
Gunfleet Pile Lighthouse	51 45.8 I 20.	On S.E. side of Sand; keep $\frac{1}{2}$ mile off, and do not pass to North. Fog-bell .....	●   41   10	1850		
One red rev. lt. $\frac{1}{4}$ min.						
All the lightvessels belonging to the Trinity House, and those of Ireland, show a bright riding lt. on the fore-stay, at a height of 6 ft. above the rail, to show the direction in which she is riding. Should the vessel drive from her proper position, she will only show a fixed red lt. at each end of the vessel, and a red flare every quarter of an hour.						
WRECK LIGHTVESSELS		are painted green, and carry two balls by day, or lights by night, on that side of them on which it is safe for vessels to pass. On the side of the lightvessel where the wreck is situated, only one ball or light is shown. No riding light is carried on the fore-stay of these lightvessels.				

*Lighthouses.*

Name and Character of Light.	Lat. N. Long. E. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Sunk Lightvessel</b> One rev. light, 45 secs.	51 49 6 I 31.1	In $\frac{9}{2}$ fathoms; red and bright flash alternately; half ball above ball. Gong; warning gun .....	●	37	10	1802
<b>Kentish Knock Lt.-vessel</b> One br. rev. lt., 1 min.	51 41. I 41.	Has two red balls vertically. In 11 fathoms on E. side of Sand. Fog-horn 5 secs. ev. min.	●	37	10	1840
<b>GALLOPER LIGHT-VES.</b> Two bright fixed lights	51 45. I 56.	In 20 fathoms on S.W. side of Shoal; lights horizontal. Gong; warning gun .....	●	36	10	1803
<b>NORTH FORELAND</b> One bright fixed light	51 22.5 I 26.8	White tower 85 ft. high. A strip of red light to E. end of Margate Sand, between N. $\frac{1}{4}$ E. and N. by W. $\frac{1}{4}$ W .....	1a	188	19	1636
<b>Ramsgate, Tide Lights</b> 1. Red or green light on West pier 2. Green lt. on W. cliff 3. Green lt. on E. cliff 4. Sparkling lt. 10 secs., on East pier	51 19.7 I 25.4	1. Red lt. while more than 10 ft. in entrance, or from 2 $\frac{1}{2}$ h. before, and 3 $\frac{1}{2}$ h. after high water; changed to green lt. when less than 10 ft. 2. Green lt. in one with W. pier lt. leads through Old Cudl Channel .. 3. Green lt. in one with ditto leads through Ramsgate Channel .. 4. Visible 5 secs., invisible 5 secs. ....	4a	38	7	....
<b>GOODWIN LT.-VESSEL</b> One br. rev. lt. 1 min.	51 19.4 I 35.5	Off N. end of the Goodwin Sands, in 10 fms. Lt. shows 3 flashes in quick succession, and is obscured for 36 secs. in ev. min. Three masts & balls by day. Gong. Warning-gun ..	●	36	8	1793
<b>EAST GOODWIN LT.-V.</b> One green rev. lt. 15 s.	51 13. I 36.4	About $\frac{1}{4}$ mile to the eastward of the Goodwin Sands, in 30 fathoms. Half diamond over diamond at mast-head. Gong; warning gun ..	●	37	...	1874
<b>GULL STREAM LT.-VES.</b> One br. rev. lt., 20 secs.	51 16.5 I 30.	On the West side of the Goodwin Sands, in 8 fathoms. Gong; warning gun .....	●	36	10	1809
<b>S. SAND HEAD LT.-VES.</b> One bright fixed light	51 9.2 I 28.2	Off the South end of the Good. in Sands, in 14 fathoms. Fog-trumpet 5 secs. every 2 min.	●	34	10	1832
<b>Deal Iron Pier</b>	.....	Red light on pier head .....	...	...	...	1865
<b>SOUTH FORELAND</b> Two ELECTRIC FIX. LTS.	51 8.4 I 22.4	In one W. by N., 1,347 ft. apart; in one, clear S. of Goodwin. High lt. cut off on a S.W. by S. bearing. Magneto-electric apparatus ..	3a	372	26	1793
<b>DOVER</b> Admiralty Pier Fix. & fl. br. lt. 7 $\frac{1}{2}$ s.	51 6.5 I 19.	Red tower, 30 ft. high, on end of Admiralty Pier. Fog Bell ev. 7 $\frac{1}{2}$ secs ..	3a	275	23	1812
<b>Dover Harbour</b> One green light Red Tide Lights	.....	One red lt. on N. pier while 7 ft.; one red lt. on S. pier while 7 to 10 ft.; two red lts. while above 10 ft. The green lt. at the W. side of entr. to Granville Dock .....	6a	44	6	1876
<b>Folkestone Tide Lights</b> 1. Red and bright lts. 2. Green light	51 4. I 11.6	1. On S. pier head a red light while 10 ft.; a white light below it when above 16 ft.; when red lt. is blinked occasionally use caution ... 2. On new pier a green light seaward, but white inshore of danger Fog Bell .....	●	37	6	1810
<b>VARNE LIGHTVESSEL</b> One red rev. lt. 20 secs.	50 56.3 I 18.3	In 16 fathoms at West end of the shoal. Gong. Warning-gun .....	5a	33	..	1860
<b>DUNGENESS</b> 1. One fixed light 2. One br. flash. lt. ev. 5 secs.	50 54.8 O 58.3	1. Tower with red and white belts, 240 yds. from extr. of point. Red lt. over W. anchorage northward of W., and red lt. over E. anchorage W. of N.E. by E. $\frac{1}{4}$ E..... 2. New tower on extr. of pt. S.S.E. $\frac{1}{4}$ E. 675 ft. from main lt. Fog-horn 5 secs. ev. min.	1a	92	15	1791
<b>Rye Tide Lights</b> 1. Two bright fixed lts. 2. Two red fixed lights. 3. One green fixed light	50 57. O 44.	1. Camber, on N. side of the entrance while 10 feet; in one N. $\frac{1}{4}$ W .. 2. Near old pier head from half flood to half ebb .. 3. West entrance to harbour half flood to half ebb ..	..	26	4	....
			..	16	3	....
			..	32	..	....

Name and Character of Light.	Lat. N. Long. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
		Long. E.				
<b>Hastings</b> One bright, one <i>red</i> lt.	50 52. o 36.	On West Hill, in one, N.N.E., 508 ft. apart, to direct the fishermen (Sept. 29 to Mar. 26)... A green light on the pier.....	..   ..	60   30	7   4	....
<b>R. SOVEREIGN SHOALS</b> One revol. br. lt. 1 min.	50 42.8 o 26.7	In 12 fms., S. Ely, 2 miles from R. Sovereign buoy. Shows 3 flashes in 23 secs., at intervals of 37 secs. Small ball over usual mast-head ball. Gong. Warning-gun.....	..   ..	36   10	1875	
<b>Eastbourne</b>	.....	A green light is shown on the pier, and two red lights on the beach.....	..   ..   ..	..	..	....
<b>BEACHY HEAD</b> One br. rev. lt., 2 min.	50 44.2 o 12.9	A white lighthouse, 47 ft. high, on summit of Bellotout Cliff. From the eastward the lt. will open when bearing N.W. $\frac{1}{2}$ W., and by keeping it so will lead $\frac{1}{4}$ mile outside Royal Sovereign Shoals .....	●   ..	285   22	1828	
<b>Newhaven</b> One br. fix. lt. and <i>Tide Light</i> <i>Green</i> light on E. pier	50 47. o 4.	On West pier-head. Tide lt. below main lt. red betw. 10 and 18 ft., bright betw. 13 and 15 ft., and green above 15 ft. .....	●   ..	28   17	8   7	....
		Long. W.				
<b>Brighton Chain Pier</b> " Pile Pier	50 49. o 8.	One green fixed light .....	..   ..	35   ..	10   5	....
<b>Shoreham Harbour</b> One bright fixed light, and <i>Tide Light</i> Two green lights	50 50. o 15.	Tide lt. on central pier; green while 8 to 11 ft., bright while 11 ft. and over, and red at high water; bears S. by W. $\frac{1}{2}$ W. from upper lt. Two green lts., one on E., one on W. pier-head. Approaching, keep high br. lt. open E. of W. pier green lt., and when clear of W. pier-head, keep near the pier until high lt. and tide light come in line .....	4a   ..	42   23	10   ..	1825
<b>Worthing Pier</b>	.....	Fixed light on the pier .....	..   ..   ..	..	..	....
<b>Littlehampton</b> <i>Red</i> lt. on E. pier, N. end	50 48. o 32.	Also tide lts. on S. end of pier; white 10 feet, green 11 ft., red 12 ft., red & white 13 ft., two white 14 ft., white & green 15 feet, till H. W.	●   ..	30   ..	9	1848
<b>OWERS LIGHTVESSEL</b> One revolving lt. $\frac{1}{2}$ min.	50 38.7 o 39.9	On the S.E. end of the Owers Shoal, in 19 fms. Flashes twice bright, once red. Fog Trumpet 6 blasts every minute. Warning Gun .....	●   ..	38   10	1788	
<b>Nab Lightvessel</b> Two bright fixed lights	50 42.2 o 59.3	Near New Grounds; must be passed to eastward. Gong; Warning Gun .....	●   ..	38   28	10   8	1812   1865
<b>ST. CATHERINE'S PT.</b> One brilliant fixed light	50 34.5 i 17.8	Stone tower, reduced in height in 1875. Lt. vis. between E. $\frac{1}{2}$ S. and N.W. $\frac{1}{2}$ W. Fog Trumpet, 2 blasts every 4 minutes .....	1a   ..	134   ..	17	1840
<b>Warner Lightvessel</b> One br. rev. lt. 1 min.	50 43.8 i 4.	In 18 fms., on the eastern part of the sh. al. Gong; Warning Gun .....	●   ..	38   ..	8	1854
<b>Ryde Pier</b>	.....	A bright fixed light .....	5a   ..	21   ..	12	1852
<b>SPITHEAD</b>	.....	Green lt. on fort at Brading Haven; red lt. on fort on No Man's Land; white lt. on fort on Horse Sand; red lt. on fort on Spit Sand ...	..   ..	..   ..   ..	..	....
<b>Stokes Bay Pier</b>	.....	Red lights on East and West ends .....	..   ..   ..	..	..	1865
<b>Southsea Castle</b> One <i>red</i> fixed light	50 46.6 i 5.2	Shows red in channel between Spit Refuge Buoy and Horse Fort, or to betw. S. by W. and S. W. by S. It is green to West of the Spit Buoy betw. S. W. by S. and W. $\frac{1}{2}$ S. ...	●   ..	51   ..	9	1822
<b>Southsea</b>	.....	Two red lights on Clarence Esplanade Pier ...	..   ..   ..	..	..	1869
<b>Portsmouth Dockyard</b> One fixed <i>red</i> or <i>green</i> light	.....	On S. end of S. railway jetty. Shows red betw. the eastern side of the harbour and S.E. tangent of Block House fort, and green westward of that line. Harbour railway works will be cleared by keeping in green light ...	..   ..   ..	..	..	1878
<b>SOUTHAMPTON WATER</b>						
<b>Calshot Lightvessel</b> One br. rev. lt., 1 m.	50 48. i 16.	Off Calshot Castle, in 8 $\frac{1}{2}$ fathoms. Gong; Warning-gun .....	●   ..	32   ..	9	1842
<b>Netley Pier</b>	.....	One fixed green light to be shown .....	..   ..   ..	..	..	1878
<b>Southampton</b>	50 53.7 i 24.4	1. On either side of entrance to Docks. In one N.N.E. $\frac{1}{2}$ E. lead up River Itchen in 15 ft... 2. On Extension Quay, N.W. side of R. Itchen 3. From Harpy Lt.-ves., at entr. of Riv. Itchen 4. From iron posts on Royal Pier, 15 yards apart. In one lead up channel .....	..   ..   ..	..   ..   ..	..	....

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Yarmouth</b> Two fixed lights	.....	Green outer lt. near castle wall; inner br. lt. in one S.S.W. lead into the harb. Temporary lt. on end of wooden pier constructing	..	12	..	1857
<b>Needles Outer Rock</b> One fixed bright, or red light	50 39.7 1 35.5	Shows red to S. from S.E. & S. to W.; then bright over entrance of Needles Channel to W.N.W. thence red up the chanel to N.E. by E., and then bright to N.E. by E. & E., to clear Warden Ledge. A bell in fog.	1a	80	9	1859
<b>Hurst Beach</b> Two bright fixed lights (Low lt. in New Fort)	50 42.4 1 32.9	In one N.E. by E. & E., 670 feet apart. Another light in the lighthouse shows only up the Solent.....	●	66	12	1812
<b>Poole</b> Two red lights	50 41. 1 58.	In one, N. & W., 786 feet apart on North side of entrance; also four lights inside .....	●	37	6	1848
Weymouth Two red, two green lts.	50 37. 3 26.	Two red lts. near beach, E. of railway station Two green lights on North pier.....	..	16	..	...
<b>PORTLAND</b> High lt., br. and fixed Low lt., br. and fixed	50 31.3 2 27.3	White towers, 50 & 85 ft. high, 1,509 ft. apart, near the Bill. In one, N.W. by N., lead betw. Race and Shambles. Low lt. only shown between N.W. by N. & N. and E.S.E. ....	1a 1a	210 136	21 18	1716 1789 1867
<b>Portland Breakwater</b> One fixed red light	.....	Shown from centre of fort at end of Breakwater. Lt. obscured by peninsula between S.S.W. & W. by S. & S. & betw. W. by S. & S. & W.N.W. lt. is obscured to an observer 15 feet above the sea when within 2 miles of Chesil Bank. Fog Bell .....	●	51	8	1851 1876
<b>Shambles Shoal Lt.-Ven.</b> One fixed light	.....	On E. end of shoal, in 15 fms. Fog Horn, 1 blast every 2 min. Warning Gun .....	●	38	10	1859
<b>Lyme Regis</b> Two red lights	50 43.5 2 55.9	In one, N.W. & N., 825 ft. apart. A bright leading light in centre of channel, N. & W....	..	11	4	1853
Teignmouth	50 32.6	One on a limestone tower on S.W. end of Denn; the other on a house .....	●	34	4	1846
Brixham	50 24. 3 30.	Red lt. at end of breakwater. Green lt. at end of W. pier. Entering by night, keep N. of Shoalstone Point to open red lt. on inner pier, which leads clear of breakwater .....	●	20	6	1839
<b>Torquay</b> One red, one br. fix. lt.	50 27.5 3 31.	Bright light on inner pier, showing red to westward; red light on outer pier .....	..	15	5	1852
Dartmouth	50 20.3 3 33.2	1. On Kingswear or N. side; br. lt. towards fairway, between S. & E. and S. by E. & E.; thence red lt. to the land, and green lt. to S.W., between S. & W. and the land, or over Checkstone, Pin Rock, &c. 2. S. & E. 110 ft. from former; in one leads up fairway .....	..	85	11	1864
		3. Near Coast-guard Station; br. in fairway, red over shoals on N. side of harbour, and green lt. over shoal of One Gun Point to S.	..	70	..	....
<b>START POINT</b> One brilliant revol. lt., visible every minute	50 13.3 3 38.5	A white tower, 92 ft. high. A fix. lt. at 181 ft. is also vis. from tower over Skerries Rocks betw. N.E. & E. and E. & N. Fog Horn, 1 blast every 3 minutes .....	1a	204	20	1836
<b>Plymouth Breakwater</b> One bright or red light Lower bright light	50 20.4 4 9.5	On W. end; red to seaward, but br. E. of N.E. & E. from it. A lower br. lt. is seen when the channel is open. A bell during fog .....	2a ..	63 48	9	1844 ....
<b>Plymouth Harbour</b> One bright, two red lts.	50 22. 4 7.	On W. Barbican pier-head is shown a br. lt., a red lt. on Millbay pier-head, & also one at Mt. Wise Landing. Fog-bell, 8 strokes a min.	●	29	6	1822
<b>EDDYSTONE</b> One brilliant fixed light	50 10.8 4 15.9	An admirable stone tower, with red and white bands, 89 ft. above foundation on the rock, which covers 14 ft. at high water. Fog-bell, 5 strokes once in every $\frac{1}{2}$ minute .....	2a	72	13	1759
<b>Falmouth</b> One rev. lt. 20 secs. Lower fixed light One green fixed light	.....	On St. Anthony Pt. The lower lt. to S.S.W. over Manacles Rocks, between S.S.W. & W. and S. by W. & W. Fog-bell struck 4 times in every alternate $\frac{1}{2}$ minute .....	● .. ..	72 35 ..	12 10 ..	1835 1865 1860

Name and Character of Light.	Lat. N. Long. W. ○	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LIZARD</b> Two brilliant fixed lts.	49 57.6 5 12.1	Two white towers, each 61 ft. high, W. by N. & E. by S., 223 ft. apart, on the Lizard Cliff. In one lead clear of the Manacles. A signal and telegraph station on Beast Point, about $\frac{2}{3}$ of a mile to E. Fog-trumpet, 1 blast every 5 minutes .....	●   229   20   1751 ●   232   20			
<b>WOLF ROCK</b> One rev. lt. 30 secs.	49 56.7 5 48.2	A noble granite tower. Flashes red and white alternately. Fog Bell, 3 strokes ev. $\frac{1}{4}$ min.	1b   110   16   1870			
<i>Penzance Tide Light</i> A fixed red or br. light, while 15 ft. inside; green while less	50 7. 5 31.	On the S. pier-head. Shows red to E. by S. & S. to S. by W. & W. The remainder a bright light. By day, a ball while 15 feet .....	5a   33   9   1817			
<b>LONGSHIPS</b> One fixed light	50 4. 5 44.7	New tower, 1873. White lt. seaward, from N.N.E. & E., or $\frac{1}{4}$ mile W. of Brisons Rocks, to S. by E., or $\frac{3}{4}$ mile W. of Runnelstone; red in-shore of these bearings. Fog-bell 2 strokes ev. 4 minutes .....	1a   110   16   1795			
<b>SEVEN STONES LT.-VES.</b> Two bright fixed lts.	50 3.2 6 5.3	On E. side of rocks, in 40 fms.; two red balls; Warning-gun; powerful Fog-horn ev. 10 secs. or Gong. To be altered in summer of 1879 to rev. lt., showing 3 flashes once in ev. min.	●   20   10   1841 ..   38   ..   ....			
<b>SCILLY</b> One bright revol. light every minute	49 53.5 6 20.7	A white tower, 74 feet high, on the summit of St. Agnes' Island; obscured by islands from N. by E. to East .....	●   138   16   1680			
<b>BISHOP ROCK</b> One fixed bright light	49 52.5 6 26.6	On the S.W. rock. A noble stone tower, 147 feet high. Invisible to eastward between N.E. by E. and E. by S. & S. Bell ev. 10 secs.	1a   110   16   1853			
<i>St. Ives Tide Light</i> 1 br. fix. lt. while 10 ft.	50 12. 5 28.	On the pier head. Lighted from Sept. 1 to April 30. Also a red light on end of outer wooden pier .....	●   23   7   1831			
<i>Hayle Tide Lights</i> 1. Two fixed bright lts. 2. One fixed red light	50 11.5 5 26.	1. On W. side of entr.; in one S.S.W. & W., 297 ft. apart, while 12 ft. water..... 2. On jetty of Lelant Quays .....	●   81   6   1840 ..   69   ..   ....			
<b>GODREVY</b> One br. flash. lt., 10 secs. Lower red light	50 14. 5 24.	On the island. A bell in fog. Lower red lt. to N.W. over the Stones Rocks, between N.W. and N. by W. .....	1c   120   15   1859 ..   93   ..   ....			
<b>Padstow</b>	.....	A red or green light on quay head .....	..   ..   ..   ..			1868
<b>TREVOSE HEAD</b> Two bright fixed lights	50 32.9 5 2.1	The lower light is 50 feet to seaward of the upper .....	1a   204   20   1847 1a   129   17   ....			
<b>BRISTOL CHANNEL.</b>						
<b>HARTLAND POINT</b> One rev. lt., $\frac{1}{2}$ min.	51 1.4 4 31.5	New tower, showing at intervals of 30 secs. two bright and one red flash. Fog-Horn 5 secs. in every 2 min. .....	1b   120   16   1874			
<b>LUNDY ISLAND</b> Upper lt., rev. ev. 2 m. Lower fixed light	51 10.0 4 40.3	In one tower, 98 ft. high. Low light visible to W. between N.N.W. and W.S.W. Rocket every 10 min. in fog .....	1b   540   31   1820 ●   470   ..   ....			
<b>Bideford</b> Two bright fixed lights	51 4. 4 12.	On Braunton Sands, North side of entrance. In one, S.E. & S., lead over bar; from half flood to half ebb .....	●   86   14   1820 ..   40   11   ....			
<b>BULL POINT</b>	.....	Lt.-ho. to be completed during the summer of 1879, and will show triple flash lt. ev. $\frac{1}{4}$ min. A lower red fix. lt. will be shown over Morte Stone. Fog-trumpet, to give 3 blasts once every 2 minutes .....	..   ..   ..   ..			
<b>Iffracombe</b>	.....	One red light on Lantern Hill .....	●   127   7   ....			
<i>Watchet Breakwater</i>	.....	Tide light fixed, 8 ft. flood to 10 ft. ebb .....	..   30   4   1862			
<b>Burnham, or Bridgewater</b> Up. lt. intermit. 4 min. Lower light fixed	51 14.9 2 59.9	In one, E. by S. & S., 1,500 ft. apart. Low lt. bright, visible westward from W. by N. to N.W. by W. & W.; a red lt. from low tower shows over the bar from W. by N. to W. & N.; and a red lt. up the river from S. by W. to S. by W. & W. ....	●   91   16   1832 ..   23   9   ....			

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Cleveden	.....	Red light on pier-head .....	..	27	5	1869
Portishead	.....	Bright light on pier .....	..	..	..	....
Breaksea Lightvessel	51 19.8	In 8 fms. 2 miles W. by N. & N. from One-fathom Bank buoy; one ball; red lt. shown from after part. Gong; signal gun.....	●	38	10	1866
One br. rev. lt. 15 secs.	3 17.6		..	14	7	....
One red fixed light						
Avon	51 30.	White tower, 65 ft., on the E. side of channel.	2a	70	13	1840
One bright fixed light	3 42.3	a red sector to N. W., and a green ray from W. to W. by S. at turn of channel .....				
English & Welsh Grounds Lightvessel	51 26.5	On S. side of Bristol Channel, in 14 fathoms; a red ball, gong, gun, &c. ....	●	38	10	1833
One br. rev. lt. 1 min.	2 58.					
New Passage	.....	Lights on pier and Charstone Rock for railway steamers.....	..	..	..	1863
FLATHOLM	51 22.5	On South point. Light is red from S. & E. to N. by W. & W. ....	1a	156	18	1737
One bright or red light	3 7.		..	..	..	1839
Briton Ferry	.....	North side of dock entrance; red light when passage is clear; green light when not open	..	..	..	....
Usk, Newport	51 32.	West side. Light bright in channel, red over Welsh Grounds and Welsh Hook; bright North to land; bright up river .....	..	30	10	1821
One bright or red light	3 3.		..	..	..	1868
Cardiff	51 27.8	About 23 yards apart. One on pier-head .....	..	..	..	1866
Two red fixed lights	3 9.7					
MASH POINT	51 24.	White towers 1,000 ft. apart, S.E. by E. & E., and N.W. by W. & W. ....	●	167	18	1831
Two bright fixed lights	3 33.	Red light from high lighthouse from N.W. by W. & W. to N.W. & W. ....	..	122	16	....
One red light						
Portcawl	.....	On ends of breakwater .....	6a	34	11	1866
One br., two red tide lts.						
Swansea Harbour	51 37.	1. White tower on W. pier-head; shown while 8 ft. water. Fog-bell; black ball by day ... 2. Additional bright lt. shown 480 yds. from extreme of W. pier, visible only to eastward 3. At South dock, vertically .....	..	24	9	1803
1. One red fixed tide lt.	3 56.					
2. One fixed bright lt.						
3. Two green or red lts.						
4. Two green or red lts.						
Scarweather Sand Lt.-V.	51 26.9	Off W. end of Sand, in 14 fms. A half globe above usual globe. Fog-trumpet, 2 blasts once in every 3 minutes. Signal Gun .....	●	38	10	1862
One red rev. lt., 20 secs.	3 55.1					
Mumbles	51 34.	A white tower, 56 ft. high, adjoining the fort	a	114	15	1798
One bright fixed light	3 58.3					
Helwick Lightvessel	51 31.	In 16½ fathoms, off W. end of Sand. Fog-horn .....	●	38	10	1846
One br. rev. lt. 1 min.	4 24.	5 secs. ev. 2 min. Warning-gun.....				
Llanelli	51 40.	One on Whiteford Point (on piles) from ½ flood to ½ ebb; from ½ flood to ½ ebb on S. end of breakwater .....	●	36	7	1850
Two fixed Tide lights	4 10.4		..	55	9	1854
Burry Port	51 41.	Near head of W. pier while 10 feet water .....	●	35	9	....
One fixed tide light	4 15.					
Saundersfoot, South Pier	.....	One red light or yellow ball while 8 feet.....	..	15	..	....
Tenby Pier Head	.....	One red tide light for steamers, &c.....	..	14	3	1856

Name and Character of Light.	Lat. N. Long. W. ○	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CALDY ISLAND</b> One br. or <i>red</i> fixed lt.	51 37.9 4 40.9	The lt. is bright seaward, but is red toward Old Castle Head, from N. 70° W. to N. 56° W., and is red over Woolwich Shoal from N. 55° E. to N. 15° E. ....	1a	210	19	1829
<b>MILFORD HAVEN</b> ST. ANN'S POINT Two bright fixed lts.	51 40.9 5 10.5	White towers, 75 and 42 ft., 610 ft. apart, on W. side. In one N. by W. & W., lead in clear of Crow and Toes Rocks. A red ray from high lighthouse shows over Chapel and Harbour Rocks to between S.E. & S. and E. & S. Fog Horn, 1 blast every 3 minutes ....	1a	192 159	19 17	1714 1841
Great Castle Head Two bright fixed lts.	.....	In one, N.E. by E. & E., lead in mid-channel	..	112 76	..	1870
Pembroke Dockyard	.....	Two red lts. in one lead up. High lt. shown betw. W. by N. & N. & N.W. & N. Low lt. betw. W. by N. & N. & N.N.E. A green sector betw. N. & W. and N. by W. & W. is shown over Carr Spit ....	6a	48	5	1862 18.8
Neyland Pier	.....	Bright light near end of landing pier; red lt. occasionally on railway pier ....	..	..	..	1868
<b>SMALLS</b> One bright (or <i>red</i> ) fix. light	51 43.3 5 40.1	Granite tower, 141 ft., red & white bands. Lt. bright seaward, from E. & S. to S.E. & E. The lt. is red over Hats and Barrels Rocks. Bell sounded, and rockets to explode sent up ev. half hour in fogs....	1a	125	16	1778 1861
<b>S' JTH BISHOP ROCK</b> One br. rev. lt. 20 secs.	51 51. 5 25.	A white tower, 38 feet high. A Gong in fogs. Fog-trumpet proposed ....	1b	144	18	1839
New Quay One bright fixed light	52 12.9 4 21.8	On pier-head. To southward of E. & S. the light is red ....	..	..	..	....
<b>CARDIGAN BAY LT.-V.</b> One rev. <i>red</i> lt. 30 secs.	52 24. 5 0.	In 35 fathoms, at 20 miles northward from Port Cardigan Gong ....	●	40	9	1860 1870
Aberystwith One fixed light Two bright fixed lights	52 25. 4 50.	Harbour entrance, lt. red to S. and W., bright to N.W. and N.E. Two lts. in a field, over inner end of harbour, while sufficient water	..	..	..	....
<b>St. Tudwall Roads</b> 1. One br. and <i>red</i> lt. 2. One lower <i>red</i> lt.	52 47.7 4 28.0	1. Vis. 8 secs., obscured 2 secs. White to westward betw. N. by E. and S. by W. Red from S. by W. to S.E. White from S.E. to N.E. by E. & E., and thence red to N. by E. Obscured by East Island, betw. N.E. & E. and E. by N. & N. .... 2. A ray with an arc of 15° is shown over Carreg-y-trai, from E. by S. to E. & N., from window 16 ft. below main light....	..	151	8	1877
<b>BARDSEY ISLAND</b> One bright fixed light	52 45. 4 47.9	A square white tower, 99 ft. high. Fog Horn, 1 blast every 5 minutes	1a	129	17	1821
Llanddwyn Point	.....	A red light all night ....	●	50	5	1845
Caernarvon	53 8. 4 24.7	One bright light on pier-head ....	●	..	..	1858
<b>CAERNARVON BAY LT.-VESSEL</b> One rev. light 20 secs.	53 5.8 4 44.2	In 30 fathoms, at 12½ miles S.S.W. & W. of South Stack light-ho. Flashes bright, bright and red. A small ball over large one. Fog Horn, 1 blast every 2 minutes ....	●	38	10	1869
<b>SOUTH STACK ROCK</b> One br. rev. lt. 1 min.	53 18.4 4 41.9	White tower, 64 ft. During fogs, a smaller br. revol. lt., at 49 ft., is shown at 30 yds. N. of lt.-ho. A Fog-bell once ev. 15 secs.; also Gun (experimental, with holophone mouth-piece) fired ev. 10 min. from North Stack ...	●	201	19	1809
Holyhead 1. One <i>red</i> flash. lt. 7½ s. 2. One bright fixed lt. 3. One small <i>red</i> light 4. <i>Red</i> and <i>green</i> lights	53 18.8 4 37.1	1. Lighthouse on new breakwater. Fog Bell 3 times every 15 secs. Fog Horns for mail packets at 11 a.m. and 11.30 p.m. .... 2. On end of wooden jetty; old harbour Bell. 3. On old tower, to N.E., shown from N.E. to N.N.E. & E. to clear Platters. Fog Bell .... 4. Red lt. on starboard; green lt. on port side of inner harbour ....	.. 6a	66 20	13 ..	1873 1864
<b>SKERRIES</b> One bright fixed light Lower <i>red</i> light	53 25.2 4 36.4	Upper lt. not visible over East Platters Rock, from S.S.E. to S.E. & S. Red lt. over Ethel and Coal Rocks, from E. & S. to E. by N. & N. Fog Horn, 1 blast every 3 minutes ....	1a ..	117 67	15 10	1803 1865

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>Amlwch Port</b> One bright fixed light	53 25. 4 20.	On North pier; shown only when the harbour is practicable .....	●	26	9	1817
<b>LYNUS or ELIAN POINT</b> One intermitting light	53 25. 4 17.3	A white building, 36 ft. high. Light visible 8 secs.; eclipsed 2 secs. Masked to mark Middle Mouse and Dulas Rocks .....	●	128	16	1835
<b>Beaumaris</b>	.....	Bright light on pier .....	..	..	..	1865
<b>Menai, Trwyn-Du Point</b> One <i>red</i> fixed light	53 18.8 4 2.4	Circular building, 96 ft. Large Fog Bell thrice every 15 secs. ....	1a	61	10	1837
<b>GREAT ORMES HEAD</b> One fixed light	53 20.5 3 52.	Light bright from N.W. by W. $\frac{1}{2}$ W. to E., red from E. to E. $\frac{1}{2}$ S. ....	1a	313	24	1862
<b>Llandudno</b>	.....	Green light on pier-head. Lower red lt. when it is dangerous to come alongside .....	..	..	..	....
<b>Rhyl</b>	.....	Bright light on pier-head .....	..	..	..	....
<b>AIR POINT</b> One br. or <i>red</i> fixed lt.	53 21.4 3 19.2	On old lighthouse, with red and white bands. It is red only within Hoyle Sand, from N.W. to E. by S. $\frac{1}{2}$ S.; fog-bell .....	●	42	9	1844
<b>LIVERPOOL BAY.</b>						
<b>N.W. LIGHTSHIP</b> One br. rev. lt. $\frac{1}{2}$ min.	53 30.3 3 31.3	In 13 fathoms N.W. $\frac{1}{2}$ W. $\frac{3}{4}$ miles from Horse Channel Fairway Buoy; a blue lt. every 2 hours; a black ball. In fogs, a bell .....	●	36	10	1814
						1873
<b>BAR LIGHTVESSEL</b> One fixed bright lt.	53 32.2 3 17.2	North $\frac{1}{2}$ miles from Upper Hoylake l.-ho., & N.W. by W. $\frac{1}{2}$ W. $\frac{3}{4}$ miles from Crosby lt.-ho. Fog-horn 3 times a minute or Bell .....	..	..	..	1873
<b>Hoylake</b> Two br. fixed lights	53 23.7 3 10.7	White towers, 55 and 31 ft. In one, S.W. $\frac{1}{2}$ S., 1,200 ft. apart, near the church .....	4a	55	13	1763
			..	31	11	....
<b>Leasowe</b> One bright fixed lt.	53 24.8 3 7.5	On the shore, between the Mersey and Dee ...	●	94	15	1763
<b>BIDSTON</b> One bright fixed lt.	53 24. 3 4.4	A stone tower, 68 ft. high, on the hill; masked to N. by E. $\frac{1}{2}$ E. ....	●	228	23	1771
<b>ROCK</b> One rev. br. lt. $\frac{1}{2}$ min.	53 26.6 3 2.4	A white tower, 94 ft. high. Also a fixed lt., while 11 ft. down Rock Channel; and another up the Mersey, from same tower. Fog-bell .....	●	77	14	1830
<b>North Docks Wall</b> One fix. <i>red</i> & br. lt.	.....	Bright betw. S. by W. & N. by W. $\frac{1}{2}$ W., red over Formby Bank E. of N. by W. $\frac{1}{2}$ W. In line with Rock lt., bearing E. $\frac{1}{2}$ S., indicates turning point betw. Horse & Rock Channels .....	..	70	9	1877
<b>Birkenhead New Pier</b>	.....	One bright fixed light .....	6a	..	..	....
<b>Formby Lightvessel</b> One revolving <i>red</i> lt.	53 31.7 3 10.8	At the elbow of Crosby and Queen's Channels, in 50 ft. Hull black. Fog-bell .....	●	30	8	1834
						1863
<b>Crosby Lightvessel</b> Three bright fix. lts.	53 30.7 3 6.9	In 48 ft., off the N.E. elbow of the Burbo Bank; a red ball. Fog-horn 3 times a min., or Bell ..	●	29	8	1840
			..	9	..	1869
<b>Crosby Lighthouse</b> One bright fixed lt.	53 32.3 3 3.9	Square tower, 74 ft., near the point .....	●	95	12	1856
<b>Ribble River</b> One intermitting light	53 44.6 3 1.3	S.E. of Stanner Point; visible $\frac{3}{4}$ min.; dark $\frac{1}{2}$ min. Tide lt. on new pier, from 2h. before to 1h. after high water .....	4b	81	12	1848
			..	..	..	1865
<b>Lytham Harbour</b>	53 44.2 3 58.5	One fixed light, while the approach is practicable .....	●	..	..	....
<b>Blackpool Pier</b>	.....	Green light seaward; bright to land .....	..	..	..	....
<b>Fleetwood</b> Two bright fixed lights	53 55.6 3 0.4	North and South, 850 ft. apart; shown while 9 ft. Fog Bell, 3 strokes every minute .....	●	90	13	1841
			..	30	9	....
<b>Wyre River</b> One bright fixed light	53 57.2 3 1.8	Pile lt.-ho. on N.E. end of North Wharf bank. Fog Bell .....	..	30	10	1840

Name and Character of Light.	Lat. N. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<i>Lune River</i> Two bright fixed lights	53 59. 2 53.	On Cockerham Point and Plover Scar Rock, while 8 ft. water.....	●	54 9	1847	
<i>Clark Wharf Spit Lt.-Ves.</i> One fixed red light	54 1.3 3 0.	Also shows a bright light, while 8 ft. Fog Bell every 20 secs.	●	20	...	....
<i>Morecambe Harbour</i> 1. One fixed bright lt. 2. Red and green lights 3. Two red lights 4. One blue and red lt.	.....	1. At extremity of W. or stone pier..... 2. At pier heads, green to westward, red to northward..... 3. One 130 yds. from end of stone pier, in line with another 1 cable from end of wooden jetty, lead over bar..... 4. Fr. m end of promenade pier, blue seaward, red to harbour.....	●   30	5	1854	
<i>Morecambe Bay Lt.-Ves.</i> One red revolving light	53 54. 3 31.	In 12 fms.; flash ev. 1/2 min. Fog-trumpet, 1 blast every 2 minutes. Warning-gun.....	●   31	10	1863	
<b>WALNEY ISLAND</b> One br. rev. lt. 1 min. One red fixed light	54 2.9 3 10.6	On the S. point. In one, N. W. by W. & W. 440 yds. apart. A red light also on Railway Viaduct; and a bright light on Piel Pier ...	●   70	13	1790	
<i>Piel Harbour</i> 1. One fixed bright lt. 2. One red and br. lt.	.....	1. On Michel Soar ..... 2. Bright to S.S.E. and N.W. in direction of channel .....	●   ...	...	....	
<i>Barrow</i> 1. One fixed light 2. One red light 3. One flashing lt.	.....	1. On E. side of chnnel to Barrow, 1 mile N.W. of Piel pier light..... 2. At dock entrance, 2 hours before to 2 hours after high water..... 3. From chimney of Hindpool Ironworks, N. of Barrow.....	●   ...	...	....	
<b>ST. EKES HEAD</b> One bright fixed light	54 30.8 3 38.	A white tower, 65 ft. high .....	1a   336	25	1821	
Whitehaven 1. One rev. lt. 2 min. 2. Two fixed lights	54 33.2 3 35.8	1. A white tower, 37 ft. high, on W. pier-head. 2. Blue lt. on N. pier; red lt. on Old Quay, while 8 ft. in entrance; red flag by day.....	..   52	11	1823.	
<i>Harrington Tide Light</i> One fixed light	54 37. 3 34.	On the pier-head, while 8 ft. water. Red drum while 8 feet .....	●   44	11	1848	
<i>Workington Tide Lights</i> 1. Two bright fix. lts. 2. Two green lights	54 39. 3 35.	1. On the ends of St. John's & Wooden piers, E. and W., while 8 ft. water .....	..   53	11	1825	
2. Two green lights		2. Two green lts. in one E.S.E. lead in .....	..   ...	..	1866	
<i>Maryport</i> One br., one tide light One green, one red light	54 43. 3 30.7	Fixed light on outer pier-head. Tide light, while 8 ft., on inner pier. Red light on starboard side, and green light on North Tongue	4a   ..	51   12	1796	
<i>Solway Lightvessel</i> One red fixed light	54 48. 3 32.	In 42 fathoms in Robin Rigg Channel. Black ball; a bell in fogs .....	●   25	6	1841	
<i>Lee Scar</i> One bright fixed light	54 51.8 3 24.7	On piles on the rocks. A bell in fogs .....	..   25	6	1841	
<i>Skinburness</i> One red fixed light	54 52.5 3 23.	A white building, 32 ft. high, on Cott or Silloth Point .....	..   40	9	1841	
<i>Carlisle Port Tide Light</i>	.....	A lamp on the pier-head .....	..   ...	..	1841	
<hr/>						
<b>ISLE OF MAN.</b>						
<b>POINT OF AYRE</b> A rev. lt., br. and red, alternately	54 24.9 4 22.	A stone tower, 99 ft. high, $\frac{1}{2}$ mile S.W. of the point; flash every minute .....	●   103	15	1818	
<i>Peel Harbour</i> One fixed red light One fixed light	54 13. 4 42.0	Red light on East side of entrance. Bright lt. on end of breakwater .....	●   21	8	1811	
One green fixed light	.....	On end of new breakwater .....	●   32	6	1865	
<i>Port Erin</i> One green fixed light	.....	On end of new breakwater .....	..   25	3	1869	
<b>CHICKEN ROCK</b> Revolving br. lt. $\frac{1}{2}$ min.	54 2. 4 50.7	Granite tower 143 ft. high, $\frac{3}{4}$ mile W. from S. extremity of Calf of Man. Fog-bell every $\frac{1}{2}$ minute .....	1b   122	16	1874	

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
St. Mary Port	.....	One bright light on pier-head.....	●	25	9	1812
Castletown Harbour	.....	One red lt. on new pier-head. Visible seaward between the entrance points of the bay .....	..	32	8	1849
Langness Point	.....	Light proposed .....	..	..	..	....
Derby Haven	54 5. 4 3d.	On Fort Island (Aug. 23 to Oct. 10); and S.W. end of breakwater .....	..	50	6	1850
Two bright fixed lights			..	14	2	....
DOUGLAS	54 9. 4 28.	A brown stone tower, 65 ft., on Douglas Head; not visible from Lang Ness .....	..	104	15	1832
One bright fixed light						
Douglas Harbour	.....	One fixed light on the North pier-head .....	..	34	6	1796
Douglas Bay	.....	A blue light on end of Promenade pier; red light on S. pier-head; green light on new landing pier .....	..	20	2	1869
Ramsey Harbour	.....	One fixed red light on S. pier-head. One fixed bright light on N. pier-head.....	●	28	4	1845
			..	34	9	1868
BAHAMA BANK LT.V.	54 20. 4 12.	In 11 fms., on S.W. part of bank. Powerful Fog-trumpet; Warning Gun. To be altered in May, 1879, to revolving br. lt., showing 2 flashes once in every $\frac{1}{4}$ minute .....	●	23	10	1846
Two bright fixed lights			..	20	..	

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>HARWICH</b> Two fixed lts. at Dovercourt	51 55.5 - 17.	62 ft. apart. In one, bearing N.W. by W. & W., lead betw. the inner Ridge & Andrews buoys. High lt. shows from S. & E. to E. by N.; low lt. only shows betw. S.E. & E. and E.S.E. ....	..	45   12	1863	
<b>North and West Jetties</b>	.....	Red lt. on North jetty, shows from W. & N. to W.S.W. Green lt. on West jetty.....	..   ..   ..	27   8	....	
<b>Landguard Point</b> One fix. red or br. lt.	.....	A red light outside, from Beach End buoy to S. by E. & E.; white to W. A strip of red lt. strikes the N. Shelf buoy to N. by W. ...	6a   33	5   1848		1868
<b>Cork Lightvessel</b> One br. rev. lt. $\frac{1}{2}$ min.	51 56. 1 23.	In 4 fathoms, near the Cork Ledge. Gong; warning gun.....	●   38	10   1840		
<b>SHIPWASH LT.-VES.</b> One bright fixed light	52 1.5 1 38.	In $\frac{1}{2}$ fms., off N.E. end of Sand. Fog horn 5 secs. every 2 min.; warning gun.....	●   38	10   1837		
<b>ORFORDNESS</b> Two br. or red fix. lt. (High light to South)	52 5.6 1 35.2	Towers, 90 & 72 ft., with red and white bands, S.W. by W. and N.E. by E., 1,450 yds. apart. In one, from S., lead through Hollesley Ray, but very close to the N.W. edge of the Whiting Sand; from N., between Sizewell Bank and Aldbro' Napes, &c. High lt. is red from W. & S. to W. by S. & S. over shoals in Hollesley Bay; the rest bright. Low lt. is red over Sizewell Bank, from N.E. & N. and N.E. & E. Then masked in-shore. The rest bright	1a   91 ..   60	17   14	....	1793
<b>Kessingland or Pakefield</b>	.....	Red lt. only shows to S.E. through the Gat...   ●   68   9   1832				
<b>LOWESTOFT</b> Upper br. rev. lt. $\frac{1}{2}$ min. Lower red or bright lt. (High light to North) Two red harbour lights	52 29.2 1 45.5	In one N.N.W. & W. 900 yds. apart. Low lt. is red over line of sands from N.N.E. seaward to S.W. by S. & br. over in-shore channels. Bell in fog. High lt. br. with lower red lt., betw. N.E. & N. by N., as a guide to round the Ness. The red lt. on N. pier is masked in-shore of N.E. by E. & E. for same purpose. When red lt. from high tower opens from the northward, haul it into red lt. from low lightho. until N. pier red lt. opens, when run for it until low red lt. changes to white. Fog Bell 3 str. ev. $\frac{1}{2}$ min.	..   123 1a   40	18   11	1609 1867	1873
<b>Corton Lightvessel</b> One red rev. lt. 20 secs.	52 31.5 1 49.5	Fairway lt. in $1\frac{1}{2}$ fms., outside Corton Patch. Half ball below usual ball. Gong; warning gun.....	●   38	9   1862		
<b>St. Nicholas Gat Lt.-Ves.</b> One bright fixed light One red flash. lt. 10 secs.	52 34.3 1 47.	In 10 fathoms, at inner end of channel; one red ball; lights at unequal heights. Gong; warning gun .....	a   40 ●   12	10   4	1827 1872	
<b>Yarmouth, or Gorleston</b> 1. One fixed tide light 2. Two red fixed lights	52 34.4 1 44.3	1. On South pier; red flag by day; lt. is red with flood tide, but green with ebb..... 2. Leading lts. to clear Caistor Shoal, one on Sailor's Home, one on Britannia Pier.....	●   .. ●   60 ●   20	2   6 4   4	1852 1873	...
<b>Cockle Lightvessel</b> One br. rev. lt. 1 min.	52 41.5 1 47.	In $\frac{1}{2}$ fathoms, at East side of North entrance of Cockle Gat. Gong. Warning-gun .....	●   36	10   1844		
<b>WINTERTON NESS</b> One bright fixed light	52 43. 1 41.5	A circular red tower, 69 ft. high; lt. masked to S. & E. to Scroby Elbow .....	●   52	14   14	1790	1870
<b>Newarp Lightvessel</b> One rev. bright light	52 45. 1 53.	In 17 fms. at N. end of Sand, with 3 masts and balls. Lt. gives 3 flashes in quick succession once in every minute, and interval of 36 secs. Gong or Fog-trumpet; 3 blasts once in 2 minutes. Warning-gun .....	●   34	10   1791		1877
<b>HASBOROUGH</b> Two bright fixed lights	52 49. 1 32.	In one N.W. & W. ( $\frac{1}{2}$ mile apart) leading lts. for Hasborough Gat .....	1a   140 1a   94	17   15	1791	1869
<b>Hasborough Lightvessel</b> Two bright fixed lights	52 58. 1 36.	In 15 fms. near N. end of Sand; lts. horizontal; two red balls. Gong; warning gun .....	●   38 ..   38	10   ..	1832	....

Name and Character of Light.	Lat. N. Long. E. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>LEMAN &amp; OWER LT.-V.</b> Upper rev. lt. 1 min., lower fixed light	53 8.6 2 1.	In 16 fathoms between the Sands; its. at unequal heights; two red balls. Gong; warning gun .....	● ..	38 27	10 ..	1846
<b>CROMER</b> One br. rev. lt. 1 min.	52 55.4 1 19.1	Near the cliff; a white tower, 59 ft. high .....	●	274	23	1719 1833
<b>Hunstanton</b> One bright fixed light	52 56.9 0 29.8	The light is red, over the Roaring Middle Sand, from W.N.W. to N.W. by W.....	2a	109	16	1665
<b>Lynn Well Lightvessel</b> One br. rev. lt. 20 secs.	53 1.4 0 25.2	In 17½ fathoms, off the hook of the Long Sand. Gong; warning gun .....	●	34	10	1828
<b>Lynn Channel Lt.-Vessel</b> One fixed bright light	..... .....	Moored in 3½ fms., at N.E. end of Wisbeach Bar Flat, 8½ miles above Lynn Well Lt.-ves. Gong. Warning Gun.....	..	38	..	1878
<b>Lynn</b> Two bright fixed lights	..... .....	Leading lights; in one, S. ½ E., 555 ft. apart...	..	..	..	1868
<b>Boston</b>	.....	Two bright fixed leading lights at Hob Hole...	..	..	..	1868
<b>Inner Dowsing Lt.-ves.</b> One green rev. lt. 20 s.	53 19.3 0 34.3	In 10 fathoms, near N.E. end of shoal. Two globes vertically. Gong. Warning-gun ...	●	38	6	1873
<b>DUDGEON LIGHT-VES.</b> One bright fixed light	53 15. 0 56.	In 9 fathoms, near South side of shoal. Gong. Warning-gun .....	●	38	10	1736
<b>OUTER DOWSING LT.-V.</b> One red rev. lt. 20 secs.	53 28.2 1 2.6	In 9 fms., on W. side of shoal. Half ball over other ball. Fog-horn, 5 secs. every 2 min. Warning-gun .....	●	38	9	1861
<b>RIVER HUMBER</b>						
<b>Spurn Lightvessel</b> One br. rev. lt. 1 min.	53 34. 0 13.	In 9½ fms., off the point. Warning-gun. Fog-horn, 2 blasts every 2 min. Warning-gun...	●	38	10	1820
<b>SPURN POINT</b> Two bright fixed lts.	53 34.7 0 7.2	High lt.-ho. red; low lt.-ho. white. In one, N.W. ¼ N., 464 ft. apart. High lt. red betw. Sandhale and Grimsby Pier, or from S.E. by S. to N.W. by W. ½ W. ....	1a 4a	93 54	15 12	1776 1851
<b>Bull Sand Lightvessel</b>	.....	One bright fixed light off Spurn Pt. Fog-bell	●	21	8	1832
<b>Grimsby</b> Three fixed red lts. Two green lights	..... .....	Red lt. on each pier-head, of outer basin, and red lt. on outer pier, E. side of entr. to Fish Dock; green lt. shown at E. or W. entr. to Fish Dock when gate is open .....	..	..	..	....
<b>Middle Sand Light-ves.</b>	.....	Red light near a wreck .....	..	..	..	1868
<b>Stallingborough Ferry</b>	Long. W.	One bright fixed light to E.N.E. ....	●	..	..	1849
<b>Killingholme</b> Three bright fix. lts.	53 39. 0 12.	Lights in one, N.W., lead up the river; and when S. by W. lead down .....	●	68 36	11 ..	1836 1852
<b>Thornsgumbald Clough</b>	.....	Two fixed leading lights .....	..	..	..	1870
<b>Salt End</b>	.....	Two fixed leading lights .....	..	..	..	1870
<b>Withernsea</b>	.....	Red light at end of pier .....	..	..	..	....
<b>Bridlington</b> One red fixed light	54 5.2 0 11.7	On the North pier-head while 9 ft. water ....	..	24	8	1852
<b>FLAMBORO' HEAD</b> One revolv. lt. ½ min., br. br. and red alter- nately	54 6.9 0 4.8	A white tower, 87 ft. high; bearing N.N.E., clears N. end of Smithic. A new lens apparatus, established June 22, 1872, showing br. br. & red flashes, of equal intensity, every ½ minute. In fogs, rockets fired ev. 10 min., to explode at an elevation of 600 or 700 ft....	1b	214	21	1806
<b>Scarborough Tide Light</b> One red fixed light	54 17. 0 23.	While 10 ft. water; on Vincent Pier; bright toward harbour. A ball by day .....	..	58	13	1806
<b>HIGH WHITBY</b> Two bright fixed lights	54 28.7 0 34.2	In one, S. by E. ½ E. (258 yards apart). A red lt. from N. tower over the Scar Rock .....	1a ..	240 240	23 ..	1858

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>Whitby Harbour</b>	54 30.	Green tide light on W. pier, from 2 hours' flood to 2 hours' ebb. E. Pier lt. red to S., but green to N. of Rock buoy	●	83	5	1831
One green tide light	○ 37.		●	54	8	1865
One red or green light						
<b>TEES BAY</b>						
Coatham	.....	Red light on outer end of pier	6a	30	6	1876
<b>Bran Sand</b>	54 38.	Wooden towers. (Not used)	..	53	..	1839
	1 13.		..	38	..	...
1. Fifth buoy, br. fix. lt.	.....	1. and 2. 1,200 yds. apart; in one, S.W. & W.	5a	27	7	1866
2. Seal Sand, red fix. lt.		mark for Fairway buoy, and lead in. There are six small lts. up the Tees	..	42	7	...
<b>Seaton</b>	54 40.	In one, N.W. by W. (118 yards apart)	●	89	13	1839
High br., low red lt.	1 12.		..	34	..	...
<b>HARTLEPOOL</b>	54 41.8	On the Heugh. The red tide lt., or red ball, from half flood to half ebt	1a	84	15	1847
High bright, low red tide light	1 10.3	from half flood to half ebt	4a	62	4	...
<b>Hartlepool Old Harbour</b>	.....	Red lt. on pier; two red lts. on quay	..	..	..	1836
“ West Harbour	.....	Green lt. on N. Pier; two red lts. in one lead in while 10 ft. water	..	..	..	1855
<b>Seaham</b>	54 50.	In one stone tower, 58 ft. high, on Red Acre Point	5a	94	14	1843
Upper bright fixed lt., low red rev. lt. $\frac{1}{2}$ min.	1 19.		6b	49	11	1857
<b>Seaham Harbour</b>		Red tide light, when practicable	5a	..	4	1846
<b>Sunderland</b>	54 55.1	N. pier lts. all night. Tide lt. on S. pier, from $\frac{1}{2}$ flood to $\frac{1}{2}$ ebb; a green lt. below it shows danger	3a	73	14	1802
Upper bright, lower red lt. on N. pier, one br. tide light on S. pier	1 21.6		5a	58	11	1857
<b>SOUTER POINT</b>	54 58.2	Tower, 76 ft. "Magneto-Electric" lts. Lower br. lt. from S. to E. to S. $\frac{1}{2}$ W.; thence red to S. by W. $\frac{1}{2}$ W over Whitburn Stile, Henton Rocks, &c. Powerful fog-horn ev. $\frac{1}{2}$ min	1b	150	20	1871
One brilliant rev. lt. $\frac{1}{2}$ min.; lower bright or red light	1 21.5		..	129	..	...
<b>TYNEMOUTH</b>	55 1.1	White tower, 79 ft. high. Near Priory ruins, in the castle	●	154	..	1802
One red rev. lt. 1 min.	1 24.					1871
<b>Tyne North Pier</b>	.....	Vertical, on North Pier Works. A red lt. at middle of North pier	..	..	..	...
Green, white, & red lts.						
<b>Tyne River</b>	55 0.5	At North Shields; in one, W. by N., 240 yards apart; shown all night	●	123	16	1808
Two bright fixed lights	1 26.0		..	77	13	...
<b>Blyth</b>	55 7.	While 8 ft. water; in one, N. by W. $\frac{1}{2}$ W.	●	48	11	1783
Two bright Tide Lights	1 30.	.....	..	26	7	...
<b>COQUET ISLAND</b>	55 20.1	Upper lt. br. seaward, but red W. of N. by E. $\frac{1}{2}$ E., over Bulmer Bush Rocks, &c. Lower lt. br. from S.S.E. to S. $\frac{1}{2}$ E.; thence westward is red over Bondicar Bush, to S. by W. $\frac{1}{2}$ W.	1a	88	14	1841
Two fixed lights in one tower	1 32.		..	55	12	1871
<b>Warkworth, red Tide Light</b>	.....	While 10 ft. water. On South pier	..	..	1	1848
<b>FARN ISLAND</b>	55 36.9	Two white towers, 43 and 27 ft.; in one, N. by W. $\frac{1}{2}$ W., 167 yards apart; high light near S.W. point	●	87	15	1776
Upper light rev. $\frac{1}{2}$ min., lower fixed light	1 38.9		..	45	12	...
<b>LONGSTONE</b>	55 39.	Red tower on W. side of rock. Dangers extend $\frac{1}{2}$ mile to N.E. Fog Horn, 2 blasts ev. 2 min.	●	75	14	1828
One br. rev. lt. $\frac{1}{2}$ min.	1 37.					
<b>Berwick-on-Tweed</b>	55 45.9	Tower, 44 ft., on the pier-head. Lights not visible W. of Seal Carr Ledges. Low red lt., while 10 ft., on bar	●	44	11	...
Upper br., lower red lt.	1 58.9		..	28	6	...

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Eyemouth	.....	One red, one bright fixed light .....	..   ..   ..	1857		
ST. ABB'S HEAD One bright flashing lt.	55 55. 2 8.	White tower, 29 ft. high; flash every 10 secs. Fog Horn, 1 blast of 6 secs. every $\frac{1}{4}$ min.	1d   224   20	1862		
Dunbar Old Harbour " Victoria Harbour	56 0. 2 30.7	Old Harbour lt. br. toward entrance, but blue to W., red to E. Bright lt. at Victoria Harbour. Additional lts. in fishing season .....	..   ..   ..	1857		
North Berwick	.....	Red lt. on North pier, October to April .....	..   ..   ..	....		
Cockenzie	.....	Green light on East pier-head .....	..   15   8	....		
FRITH OF FORTH						
INCHKEITH One br. rev. lt. 1 min.	56 2. 3 8.	A white tower, 45 ft. high, on the summit of the island .....	2b   220   18	1804		
Fisherrow One red fixed light	.....	On the pier-head; all night, except in moon-light .....	●   20   5	1839		
Leith Green lt. on E. pier-head Red light on E. pier White light on W. pier	55 59. 3 10.	A green lt. under the white one, on inner part of W. pier, while 10 ft. in Victoria Dock; the green changed to red when Dock gates are open Gong .....	6a   17   8 6a   22   8 5a   28   10	1758 1829		
Newhaven	55 59. 3 11.	One bright lt. on the pier, strengthened in the direction of Herwit Shoal .....	6a   32   5	....		
Granton Three fixed lights	55 59. 3 15.	Red lt. on main pier-head. Fog Bell. Green lt. on E. and red lt. on W. breakwater heads .....	..   33   6	1845		
Grangemouth One fixed red light	.....	At entr. of River Carron. On end of S. embankment. A reflected or apparent red lt. is also shown on N. side of entrance .....	●   33   10	1847		
Charlestown	.....	One bright light on end of outer pier .....	6a   ..   ..	1866		
Inverkeithing	.....	Two red lights on West Quay .....	..   ..   ..	1856		
St. David	.....	A bright fixed light .....	..   19   ..	1866		
Burntisland Red and bright lights	56 4. 3 14.	Red lt. on E. pier-head, and br. lts. on each of the railway piers, a short distance to the eastward, while the ferry is running. On the E. pier-head a green lt. below red lt. indicates, Keep in the offing .....	..   13   8 ..   28   .. ..   26   8	1845 1853 1860		
Pettycur	.....	A red lt. at Newhalls, & a white lt. at Queensferry, for passage boats only .....				
Kirkcaldy One fixed light	56 7. 3 9.	One bright fixed light on pier .....	..   ..   ..	1854		
Dysart	.....	On East pier head. Red to seaward; white when harbour is open .....	..   35   8	....		
W. Wemyss	.....	Red tide light .....	..   ..   ..	....		
Buckhaven	.....	A white light on East pier-head .....	a   17   9	1854		
St. Monans One red, and one br. lt.	56 12.5 3 46.3	One on pier-head; the other on a house; fishing lights .....	..   20   ..	1855		
Pittenweem Two fixed red lights	56 13. 3 43.5	One on pier-head, and one on a building. In bad weather a bright gas light is shown while 6 feet .....	6a   25   6 6a   ..   6	1853		
Anstruther One fixed bright light	56 13.3 2 41.9	On E. pier-head. Also two bright leading lts. at W. Anstruther .....	..   20   4	1848		
Cellardyke	.....	On a house, in W. part of harbour; only while boats are out .....	..   ..   ..	....		
Crail One red, one bright lt.	.....	Upper red, lower br. lt. From old stone beacons on top of cliff. Aug. 1 to April 30. Gas lts. ..   100   6 ..   80   ..	100   6 80   ..	....		

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Descripns of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>ISLE OF MAY</b> Two brilliant fixed lts.	56 11.1 2 33.3	Two stone towers, 78 and 36 ft.; low lt., 750 ft. distant, on N.E. side. In one, S.S.W. $\frac{1}{4}$ W. leads $\frac{1}{2}$ mile E. of North Carr Rock. Low lt. only visible over $15^{\circ}$ towards N. Carr Rock	1a   240 ●   110	21   15	1816   1844	
<b>BELL ROCK</b> One revol. light, bright and <i>red</i> alternately, every minute	56 26.1 2 23.1	A tower, 117 ft. high; on the Bell Rock, at 10 feet below high water. A bell is sounded every half minute in fogs.....	1a   93	15	1811	
<b>St. Andrew's</b> Two fixed lights	56 20. 2 47.	Red lt. on the pier-head, and bright lt. on a turret in cathedral wall .....	●   30 5a   100	6   5	1825   1849	
<b>BUDDONNESS or TAY</b> Two brilliant fixed lts.	56 28.1 2 44.9	Two white towers, 104 and 65 ft., 1,200 ft. apart, on the low Ness. In one, N.N.W. $\frac{1}{4}$ W., lead on to the Abertay Sand. High lt. open N. of low lt., bearing N.W. $\frac{1}{4}$ N., leads up to entrance .....	3a   103 3a   61	15   12	1820   ...	
<b>Tay River Light-vess. Intended</b>	.....	To show a flashing lt. ev. 10 secs., S.E. $\frac{1}{4}$ S. from Buddon Ness high lt.-ho., & N.E. $\frac{1}{4}$ E. $\frac{3}{4}$ cables from black buoy No. 3.....	...   ...	...   ...	...	
<b>Port on Craig</b> Two bright fixed lights	56 27. 2 49.	West, a white tower, 76 ft. East, a pile ltho., 1,700 yds. apart. In one, N.W. by W. $\frac{1}{4}$ W., lead up the Tay. A fog-bell at the pile ltho.	a   80 ●   35	12   10	1820   1845	
<b>Newport</b> Two bright fixed light	56 26. 2 57.	On the West Ferry pier. In one, N.N.E., 63 yards apart .....	●   10 ..   16	7   8	...   ...	
<b>Dundee Harbour</b> 1. Two fixed <i>red</i> lights 2. <i>Red</i> and bright lts. 3. Two fixed <i>red</i> lights	..... ..... .....	1. On middle and E. pier. In one, N.W. $\frac{1}{4}$ W., lead S.W. of Beacon Rock .. 2. On Ferry pier at Dundee, to lead East of Middle Bank..... 3. Tide lts. at entrance of Camperdown dock	●   11 ..   .. ..   19	7   ... ...   ... 3   3	1827   1865	
<b>Arbroath</b> 1. One <i>red</i> fixed light 2. Two fixed lights	56 33. 2 35.	1. On the North pier, when vessels enter. An occasional bright flash is a warning to keep off..... 2. Leading lights West of inner harbour.....	●   24 ..   ..	8   ...	1826   ...	
<b>MONTROSE NESS</b> One bright fixed light	56 42. 2 26.	A white brick tower, 127 ft., on South pt. of entrance.....	2a   124	17	1879	
<b>Montrose Harbour</b> Two fixed <i>red</i> lights	56 42. 2 27.	White towers, on the N. side of entrance, 900 feet apart. In one, N.W. by W. $\frac{1}{4}$ W., lead into the river .....	●   60 ..   35	10   11	1816   ...	
<b>Stonesshaven</b> One br., one <i>red</i> fixed lt.	56 58. 2 12.	East, or low lt., bright. On inner side of harbour. In one, W. by N. $\frac{1}{4}$ N.....	●   18 ..   24	6   ...	1839   ...	
<b>GIRDLENESS</b> Two bright fixed lights	57 8.2 2 3.	In one tower, 120 ft. high. Fog Whistle for 10 secs. at intervals of 1 minute.....	1a   185 ●   115	19   16	1833   ...	
<b>Aberdeen</b> One bright fixed light Two <i>red</i> (or <i>green</i> ) fixed lights <i>Red</i> , white, & green lts.	57 8.5 2 4.1	Tide lt., bright, on N. pier-head, from $\frac{1}{2}$ -flood to high water. When entr. is safe, the two lts. at Torry are red; when ships cannot enter, green. In one, W. by S., they lead in. On pole at head of S. breakwater, 6 ft. apart. Not shown in bad weather, when N. pier lt. is obscured over and 200 yards outside S. breakwater head .....	a   40 ..   47 ..   30	8   3 ...   ...	1842   ...	
<b>SUCHANNES</b> One flashing lt., 5 secs.	57 28.2 1 46.1	A stone tower, 15 ft., on the Ness. Shown from N. by E. to S.W. by W., by E. and S.	●   130	16	1827	
<b>Boddam</b> 1. Two fixed <i>red</i> lts. 2. Two fixed <i>red</i> lts.	..... .....	1. About 120 yds. N. of pier of S. harbour. In one lead through E. channel to S. harbour... 2. On wooden bridge and on wooden pier of S. harbour. In one lead through W. channel to S. harbour. Only in fishing season .....	..   ..	...   ...	...	
<b>Peterhead</b> Lts. discontinued during alterations, 1878-9	57 30. 1 46.	Br. lt. on elbow of W. pier in S. harbour; shown to S., betw. S. $\frac{1}{4}$ E. and S.W. by W. $\frac{1}{4}$ W.; red lt. on W. pier in N. harbour; shown to E., betw. E. $\frac{1}{4}$ N. and N.E. $\frac{1}{4}$ N.....	a   24 a   26	10   10	1834   1849	
<b>Fraserburgh</b> Two fixed <i>red</i> lights	57 41.5 2 0.	On pier-head and middle pier. In one, S.E. by E., 238 ft. apart; from July to April .....	..   36	5	1841	
<b>KINNAIRD HEAD</b> One br. or <i>red</i> fixed lt.	57 41.9 2 0.1	A stone tower, 76 ft. high. Light red over Rattray Brigs, westward of S.S.E. $\frac{1}{4}$ E. ....	1a   120	15	1851	

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Gardenstown</b> One fixed light	.....	Shown on E. quay-head, in br. and red sectors	..   ..   ..   ..	..	..	....
<b>Macduff</b> One br. or red fixed lt.	57 40. 2 30.	On the W. pier-head. Is red when the harbour is open .....	●   25	6	1829	
<b>Banff</b> Two white, one red lt.	57 40. 2 31.	One white light on N. pier-head. One high white lt., with lower red lt., in the upper part of the new harbour; visible when entrance is open. In one, S.E. $\frac{1}{4}$ S., lead in ...	..   28	8	1851	
<b>Elgin and Lossiemouth</b>	.....	One green light on South pier-head .....	..   30	..	1866	
<b>COVESEA SKERRIES</b> One rev. lt. 1 min.	57 43.2 3 20.3	Stone tower, 118 ft., on Craig Head. It is red to E., in Spey Bay, from S.E. by E. $\frac{1}{4}$ E., to S.E. $\frac{1}{4}$ S. The rest is bright .....	1b   160	18	1846	
<b>Chanonry Point</b> One bright fixed light	57 34.5 4 5.	A stone tower, 42 ft. high, on the point .....	4a   40	11	1846	
<b>Cromarty Point</b> One red fixed light	57 41. 4 2.	A tower, 42 ft. high, on the point .....	4a   50	9	1846	
<b>TARBET NESS</b> One intermittent lt.; br. $2\frac{1}{2}$ min., eclipsed $\frac{1}{4}$ m.	57 51.9 3 46.5	Stone tower, 134 ft. high, 430 yards from extreme. Within Moray Frith, from S. $\frac{1}{4}$ W. to S.W. $\frac{1}{4}$ W. light is continuous (fixed) .....	●   175	18	1830	
<b>Little Farry</b> Two fixed lamp lights	57 56. 4 0.	Occasionally; on N. side, N.W. $\frac{1}{4}$ N., 1,800 ft. apart .....	..   19	4	....	
<b>Latheronwheel</b> One fixed white light	58 16.2 3 22.9	Occasionally; on South head, at the end of fishing season .....	..   ..	..	1852	
<b>Wick or Pulteney Town</b> One red, one br. light	58 26. 3 5.	On the North pier-head; red lt. on new breakwater .....	a   35	8	1851	
<b>NOSS HEAD</b> One revolving lt. $\frac{1}{2}$ min.	58 28.6 3 3.1	Bright light seaward; in Sinclair Bay, from N.E. $\frac{1}{4}$ N. to W.N.W., the lt. is red .....	1b   175	20	1849	
<b>PENTLAND SKERRIES</b> Two bright fixed lights	58 41.4 2 55.4	Two stone towers, 118 and 88 ft. high, N.N.E. and S.S.W., 100 ft. apart .....	1a   170	18	1794	
<b>DUNNET HEAD</b> One bright fixed light	58 40.3 3 22.3	A stone tower, 66 ft. high, on the northern-most point of Scotland .....	1a   346	23	1831	
<b>Little Holburn Head</b> One flashing lt., 10 secs.	58 36.8 3 32.2	Tower, 55 ft. high. Light white toward Pentland Firth; red West of S.S.W., in Scrabster Road .....	1a   75	13	1862	

## ORKNEY ISLANDS.

<b>CANTICK</b> One br. rev. lt.; 1 min.	58 47.0 3 7.6	A white brick tower, 73 ft. high, on the head, Hoy Island .....	2b   116	16	1858
<b>Hoy Sound, Gremsa Id.</b> High light, red or white Low light, bright	58 56.1 3 16.5	The bright low light is on the N.W. point, and is visible N. of E. $\frac{1}{4}$ S. and W. $\frac{1}{4}$ N. The high lt., on N.E. point, is red to seaward, but br. from N.N.W. $\frac{1}{4}$ W. to E.N.E. A ray of light is shown toward E. entrance of Hoy Sound, between S.S.E. $\frac{1}{4}$ E. and S. $\frac{1}{4}$ E. In one, S.E. $\frac{1}{4}$ E., they lead in mid-channel from westward. They are 2,297 yds. apart .....	●   115 a   55	10 7	1851
<b>Kirkwall</b> One bright fixed light	58 59.2 2 57.5	On the pier-head, from August to April .....	●   20	9	1854
<b>AUSKERRY</b> One bright fixed light	59 2. 2 34.	White brick tower, 112 ft. high, on S. point of island, in Stronza Firth .....	1a   110	16	1867

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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<b>START POINT</b> One fixed <i>red</i> light	59 16.6 2 22.4	A new stone tower, on East point of Sanda Island, Ronaldsha Firth .....	4a	80	14	1896 1870
<b>NORTH RONALDSHA</b> One br. flash. lt. 10 secs.	59 23.2 2 23.6	A brick tower, 139 ft. high, on N. point of Orkney Islands .....	a	140	18	1854

## SHETLAND ISLANDS.

<b>SUMBURGH HEAD</b> One bright fixed light	59 51. 1 16.	A stone tower, 55 ft. high, on the S. point of Zetland .....	●	300	22	1812
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<b>BRESSAY</b> One rev. lt., 1 min.; red and <i>white</i> alternately	60 6.2 1 7.5	White tower, 53 ft. high, on E. side of entrance to Lerwick .....	2b	105	15	1858
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<b>WHALESEY SKERRIES</b> One br. rev. lt., 1 min.	60 25.4 0 44.	A white tower, 98 ft. high, on Bound Skerry...	1b	145	18	1854
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<b>NORTH UNST</b> One bright or <i>red</i> light	60 51.3 0 53.	A white tower, 64 ft. high, on Muckle Flugga, N. part of island. The lt. is red towards the Skaw of Unst. Red between S.S.E. & E., and S.E. by E. & E. ....	1a	235	21	1854
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<b>CAPE WRATH</b> One revol. lt., 1 min.	58 37.5 4 59.7	White tower, 65 ft. high. Flashes white and red alternately.....	●	400	23	1828 1871
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<b>BU STOKER</b> One br. intermittent lt.	58 14.2 5 23.	White tower, 47 ft. high, on S. Ear. Visible 1 min. Eclipsed $\frac{1}{2}$ min. ....	a	195	20	1870
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<b>SOUTH RONA</b> One bright flash. lt. 12 s.	57 34.5 5 57.4	White tower, 42 ft. high, on N.E. point of island .....	2c	222	20	1857
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<b>Kyle Akin, Loch Alsh</b> One br. or <i>red</i> fixed lt.	57 16.6 5 44.5	On S.W. point of Gillean Island. Lt. bright in fairways of Applecross Sound and Loch Alsh. Red elsewhere.....	a	53	11	1857
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<b>Oronsay Island</b> One br. or <i>red</i> fixed lt.	57 9. 5 47.	White tower, 63 ft. high, on island, N.W. part of Sleat Sound.....	4a	68	12	1857
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## HEBRIDES ISLANDS.

<b>BUTT OF LEWIS</b> One bright fixed light	58 30.7 6 16.	A white tower, 20 ft. high. Visible seaward from S. by E. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S. ....	1a	170	19	1862
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<b>Stornoway</b> 1. One br. rev. lt. $\frac{1}{2}$ min. 2. A reflected light	58 11.5 6 22.2	1. White tower, 45 ft. high, on Arnish Point... 2. A prism on beacon, on S.E. end of reef, reflects light from a lower window; visible in entering .....	2b	56	12	1852
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<b>East Loch Tarbert</b>	.....	Red light on breakwater .....	..	..	..	1876
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<b>MONACH ISLES</b> Upper lt., flashing 10. s. Lower lt., fixed <i>red</i>	57 31.6 7 41.6	In one tower, 133 ft. high, on Shillay Island. Red lt. shown to northward, from N.W. by N. to N.E. by E. ....	1a	150	17	1864
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<b>GLASS ISLAND</b> One fixed bright light	57 51.4 6 38.5	White tower, 100 ft. high, on E. pt. of Scalpay, Harris Isles .....	1a	130	17	1769
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<b>USHENISH</b> One fixed <i>red</i> light	57 17.9 7 11.5	East side of S. Uist. Shown between N.E. & N. and S.S.W. ....	1a	176	18	1857
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<b>BARRA HEAD</b> One intermittent light	56 48. 7 38.	Visible $\frac{1}{2}$ min., and dark $\frac{1}{2}$ min. On top of Bernera Island.....	●	680	38	1858
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<b>SKERRYvore</b> One rev. light, 1 min.	56 19.4 7 6.5	Granite tower, 158 ft. high, on the rock .....	1c	150	18	1844
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Lighthouses.

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Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>DUBH ARTACH ROCKS</b> One fix. bright or red lt.	56 8. 6 38.	Tower, 98 ft. high, on rock off Iona Sound. Light is red towards S. coast of Iona and Torranae Rocks, or to between E. & S. and N. by E. & E.; the rest bright all round. Fog-bell 10 secs. in ev. 40 secs .....	1a   145   18   1872			
<b>ARDNAMURCHAN</b> One fixed bright light	56 43.6 6 13.5	Stone tower, 118 ft. high, on the point. Shown between N.E. by E. & E., and S.S.W. & W.	1a   180   18   1849			
<b>Sound of Mull</b> One fixed light	56 38. 6 4.	On Runa Gal Rock. Red lt. N. to seaward; green towards rocks; white towards Mull Sound .....	4a   55   12   1857			
<b>LISMORE</b> One fixed bright light	56 27.3 5 36.3	White tower, 98 ft. high, on Musdile Island ...	●   103   15   1833			
<b>Loch Ell</b> One fix. br. or red lt.	56 43.3 5 14.5	On Corran Point. Light is red to E., between S.W. by W., and N.E. by E. & E., and is br. to westward .....	..   36   10   1860			
Oban	.....	A lantern on the pier for steamers .....	..   ..   ..   1858			
<b>Phladda Island</b> One fix. br. or red lt.	56 19. 5 39.5	North end of Scarba Sound. The lt. is red northward, over Bogha Nusdil Rock, betw. N. by E. & E. & N.N.E. & E.; thence bright landward to S.S.W. & W.	4a   42   11   1860			
<b>Crinan Canal</b>	.....	One red light on East side .....	..   25   4   1851			
<b>Sgeir Macleor Iron Rock</b> One br. rev. lt. $\frac{1}{2}$ min.	55 52.5 5 49.5	Tower, 88 ft. high, on Sgeir Macleor or Sker-ville, at S. entrance to Sound of Jura .....	2b   73   14   1865 1871			
<b>Rudha Mhail</b> One fixed br. or red lt.	55 56.1 6 7.5	White tower, 113 ft. high, on N. pt. of Islay Island. Light is red to westward between N.N.E. & E. and W. by N. Bright in all other directions .....	..   ..   ..   ....			
<b>M'Arthur's Head</b> One fixed br. or red lt.	55 45.8 6 2.8	White tower, 42 ft. high, on S. end of Islay Island. Light bright up Sound to N. & E.; thence red towards Jura to East. The rest bright .....	1a   128   17   1861			
<b>RHYNNS OF ISLAY</b> One flashing lt., 5 secs.	55 40.3 6 30.8	White tower, 98 ft. high, on Oversay Island, off S.W. point of Islay .....	●   150   17   1825			
<b>Lochandail</b> One bright, or red fix. lt.	55 44.7 6 22.2	On Dun Point, N. of Port Charlotte. Light is bright to S., from S.W. by W. to S. by W.; thence red to E. & S.; then br. to N.E. by E. & E. ....	4a   50   12   1869			
<b>Port Ellen</b> One fixed red light	55 36. 6 12.	Square tower, 60 ft. high, on Carrig Fadda Point, West entrance .....	..   45   11   1853			
<b>MULL OF CANTYRE</b> One fixed bright light	55 18.6 5 48.	S.W. headland of Cantyre .....	●   297   22   1787			
<b>SANDA ISLAND</b> One fixed red light	55 16.5 5 34.9	On the Ship Rock. Not seen to N. of S.E. by E. & E.; kept in sight, clears Patterson Rk. Fog Horn, blast of 7 secs. every min.; best heard when southward of it. Elevated 150 t.	1a   165   15   1850			
<b>DAVAR ISLAND</b> One br. rev. lt., $\frac{1}{2}$ min.	55 25.7 5 32.2	Stone tower, 65 ft. high, on East part .....	2b   120   17   1854			
Campbellton	.....	Red lt. on old pier-head, shows from S.S.E. to E.N.E.; green lt. on new pier-head, shows from S.S.E. to N.E. by E. & E. ....	..   18   2   ....			
Ardriahraig	.....	A fixed white light on pier-head .....	..   25   4   1850			
<b>PLADDY ISLAND</b> Two fixed bright lights	55 26. 5 7.1	One 52 ft. above the other. On island, off S.E. pt. of Arran Island. Shown seaward from N.W. by W. to N.E. by E. .... Fog-trumpet, 5 secs. in every $\frac{1}{2}$ minute	●   180   17   1790 ●   77   14   ....			

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Miles.	Visible in Miles.	Year established.
<b>FIRTH OF CLYDE.</b>						
Lamlash Harbour One fixed green light	55 33.3 5 4.0	Lt.-ho. on S.W. end of Holy Id., E. side of S. entr. to harbour. Vis. seaward from S.E. 1 E. to S.W. by S., and in harbour. Fullerton Rock W. 3/8 350 yards from lighthouse.....	4a	46	12	1877
<b>CUMBERAIS</b> One fixed bright lt.	55 43.3 4 58.	White tower, 36 ft. high, W. side of Little Cumbræs Id. Fog-trumpet, 5 secs. in ev. 25 secs.	2a	115	15	1793
Toward One br. rev. lt. 1 m.	55 51.7 4 59.3	White tower, 63 ft. high, on the point .....	•	55	11	1812
Clock One fixed bright lt.	55 56.6 4 52.6	White tower, 76 ft. high, on pt. Fog-whistle of 2 notes sounded 8 secs. 4 times a minute At Kempock Pt. a Fog-bell is struck ev. 6 secs., and at Fort Matilda 2 Fog-bells, of different tones, are struck once every 8 secs. ....	•	76	..	1707
Greenock, Garvel Point One red fixed light	55 57. 4 45.	South edge of channel, 280 yds. S.E. by E. ½ E. from custom-house light .....	4a	25	7	1868
Two red, and 1 white light	.....	The red lts., 1 mile N.N.W. of custom-ho., 140 yds. apart. In one, W. by S. & S., lead to anchorage. The white lt. is front of custom-ho. ....	..	40	..	1834
Helenborough	.....	Red lt. on pier-head, green lt. on inner end of pier, between are two bright lights .....	..	26	4	1829
Port Glasgow	.....	One fixed bright lt. off entrance, and another on steam-boat quay .....	4a	18	3	1861
CARDROSS	.....	Red light on the Pillar Bank .....	5a	22	4	1849
Auchenlech	.....	Bright light 2 miles above Port Glasgow .....	..	..	..	....
Bowling Bay	.....	Small light in Forth and Clyde Canal .....	..	12	2	1849
Garmoyle Lightvessel	.....	Bright light 3 miles above Port Glasgow .....	..	24	..	1868
Dumbuck	.....	South side of channel .....	..	..	..	1868
Dickie's Light	.....	Bright light 1 mile above Dumbarton .....	..	..	..	....
Donald's Quay	.....	Red and bright light .....	..	26	..	1849
Park Quay	.....	At bend of channel .....	..	24	..	1869
Near Newshot Island	.....	Red light on North bank .....	..	24	..	1869
Glasgow, Broomielaw	.....	Gas light .....	..	22	4	1844
Ardrossan	55 38.4	On breakwater; bright 6 secs.; eclipsed 1 sec. shown betw. W. and W.S.W. Fog-trumpet	a	26	5	1840
One bright flashing lt.	4 49.5	.....				1870
Saltcoats	55 37.9	Bright bull's-eye in red glass plate, on pier ...	..	26	6	1840
Troon Harbour Rev. br. lt. & fix. red lt.	55 33. 4 41.	Revolves, 40 secs. bright, 20 secs. hidden. In one, S.W. ½ S., 350 yards apart .....	..	35	9	1827
Ayr Harbour Upper br., lower red lt.	55 28.2 4 38.2	At N. side of harbour. Red tide light N.W. by W. & W., 283 yds. distant; while 8 ft. on bar .....	6a	56	10	1790
Red Tide Light		.....	..	19	7	1826
.....		.....	..	14	5	....
Turnberry Point One br. flash. lt. 12 secs.	55 19.5 4 50.3	White brick tower, 64 feet high, at ruined castle .....	b	96	15	1873
Loch Ryan One fixed bright light	54 57.7 5 2.	White tower, 50 ft. high, on Cairn Ryan Point	4a	46	10	1847
Stranraer White, red & green lts.	54 54.7 5 1.7	On East pier; West pier, and inner end .....	..	9	..	....
CORSEWALL	55 0.5	A white tower, 110 ft. high, on West side of entrance to Loch Ryan .....	•	112	15	1817
One red and white rev. light, 1 min.	5 9.5	.....				
Port Patrick	54 50.3	White stone tower, 30 feet high, at S.E. angle of harbour .....	6a	37	10	1856
One fixed bright light	5 7.0	.....				1870
MULL OF GALLOWAY	54 38.1	On S.E. point. Visible ½ min.; invisible ½ min.	•	325	23	1830
One intermitting br. lt.	4 51.3	.....				
LITTLE ROSS	54 46.	White tower, 65 ft. high, on the island .....	1c	175	18	1846
One flash. light, 5 secs.	4 5.	.....				
Annan River One fixed white light	54 57.7 3 16.	On Barnkirk or Annan Foot, from half flood to half ebb Fog Bell .....	..	..	..	1841

Name and Character of Light.	Lat. N. Long. W. • ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>FASTNET</b> One rev. light, 1 min.	51 23.3 9 36.4	Circular white tower, 92 ft. high, with red belt, on the summit of the rock .....	1b	148	18	1864
<b>GALLEY HEAD</b> One revol. lt. ev. min.	51 31.8 8 57.2	White lt.-ho. on extr. of head. Lt. shows 6 or 7 flashes during 16 secs., and is obscured 44 secs. Visible between W. and E. by S. ....	6	174	19	1877
<b>KINSALE OLD HEAD</b> One bright or red light	51 36.2 8 31.9	A white tower, 100 ft. high, with two red belts. A red ray is sent over the outer part of Courtmacsherry Bay, between N.W. by W. & W. to W. & N., or from the Seven Heads to the Horse Rocks.....	1a	236	21	1853
Kinsale Harbour One bright fixed light	.....	From window on Fort Charles, on East side. From S.S.W. & W. to S.W. & S. ....	●	38	10	1804
Daunt's Rock Lt.-Ves. One red fixed light	54 43. 8 17.	Vessel black, in 14 fms., at $\frac{3}{4}$ mile S. by E. from Daunt's Rock, and $4\frac{1}{2}$ miles S.W. from entrance to Cork Harbour. A fog-gun twice every $\frac{1}{4}$ hour .....	●	39	8	1874
<b>CORK HARBOUR</b> Poor Head	.....	At 3 miles S.E. of entrance to Cork, a fog-trumpet gives blast of 5 secs. every 2 min....	.. 1	.. 1	.. 1	....
Roche Point Upper lt. intermit. br. Lower light, fix. br.	51 47.5 8 15.2	White tower, 49 ft. high. Upper lt. shows br. for 15 secs., and is eclipsed 5 secs. Lower br. lt. shows only from S.W. by W. to S.W. & S., over Daunt's Rk. Fog-bell twice in ev. min.	● 2a	98 60	10 8	1817 1864
Queenstown SEIT BANK	51 50.7 8 16.4	On piles, in 9 ft. water, on E. elbow of bank. Lt. red, with a sector of br. over Bar Rock, between N.E. by E. & E. and N.E. & N. ....	4a	32	8	1848
MULLOUGH SPIT One fixed red light	.....	On piles, 100 ft. from the channel. Fog-bell...	4a	25	3	1859
Bright, red, & green lts.	.....	A green lt. is shown on the N. side of the channel at Donkettle; a bright lt. at Black Rock Castle; and a red lt. at Dundain, and also at Tivoli .....	.. 1	.. 1	.. 1	....
<b>BALLYCOTTIN</b> Flashing light, 10 secs.	51 49.5 7 59.	Circular stone tower, 50 ft. high, on the outer island; shown from E. & N. to W. & N. Fog-bell .....	1c	195	18	1850
Youghal 1. One bright fixed lt. 2. Lower red tide light 3. Additional red tide lt.	51 56.5 7 50.5	1. & 2. In one tower, on W. side of entrance 2. Shown from S.W. by S. to S. by W. & W. From 2h. before to 2h. after high water. A tide-light by day .....	3a	78	6	1852
		3. Shown from small building E. of lightho., betw. S.S.E. & E. & S.E., from 2h. before to 1h. after high water .....				1870
<b>MINEHEAD</b> Interm. light, 1 min.	51 59.5 7 35.1	On S. side of head. Bright, 50 secs.; suddenly dark, 10 secs. Shown from W. by S. & S. to E. & N. ....	1a	285	21	1850
Dungarvan Red, green, and br. lt.	52 4.4 7 33.1	On Ballinacourty Pt. Red over Carrickapane Rock; green, over rocks from Ballinacourty Pt., from E. to S.E. by E.; and bright in other directions .....	3a	52	10	1858
<b>WATERFORD</b>						
HOOK TOWER One bright fixed lt.	52 7.4 6 55.9	Tower, 115 ft. high, striped red and white horizontally, on E. side of entrance. Fog-gun every 10 min.....	●	152	16	1859
Dunmore, Pier Head One red light	52 9. 6 59.5	West side of entrance. It is bright N. of pier	●	44	5	1826
Duncannon Fort Two fixed lights	52 13.2 6 56.	In one tower. The lower is only seen seaward	●	53	10	1774
Duncannon N. One fixed light	.....	Half a mile N.N.E. & E. of the fort. In one, with fort lights, lead in .....	●	43	..	....
Spit of Passage	.....	One fixed red light, on piles .....	..	..	..	1867
Rosslare	.....	Ballygarry Bay, Wexford. Bright light on breakwater in progress .....	..	..	..	....

If a vessel is seen standing into danger, from any of the Irish lightvessels, a gun will be fired as a warning, and the two signal flags J D, of the Commercial Code, hoisted.

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SALTEES LIGHT-VES.</b> One revol. bright lt., 3 flashes once ev. min.	52° 2.4 6° 40.	By day shows one mast with ball, and jigger mast. Fog-trumpet, blowing 5 secs., silent 29 secs., then blowing 5 secs., silent $\frac{1}{2}$ min.	..	38   10	1824 1878	
<b>TUSKAR</b> Red and br. rev. light	52° 12.1 6° 12.3	Circular white tower, 110 ft. high. A flash of 10 secs. every 1 min.; bright, bright, and red alternately. Fog-bell and rockets.....	●	101   15	1815	
<b>LUCIFER SHOALS LT.-V.</b> One fixed red light	52° 21.5 6° 9.3	In 21 fathoms, $2\frac{1}{2}$ miles E. of shoals; has 3 masts; globe, and light, at main. Gong.....	●	33   9	1863	
<b>BLACKWATER BK. LT.-VESSEL</b> One bright fixed light	52° 30.2 6° 5.	In 19 fathoms, 3 miles E. & S. from black buoy; has 3 masts; 2 globes at main. Gong .....	●	33   9	1857 1867	
<b>ARKLOW BANK S. LT.-VESSEL</b> One br. rev. lt., $\frac{1}{2}$ min.	52° 40.8 5° 57.2	In 25 fathoms, 2 miles from S. end of bank; has 3 masts; light, and half globe, over globe at main. Gong .....	●	39   10	1824 1867	
<b>ARKLOW BANK N. LT.-VESSEL</b> Two bright fixed lights	52° 53. 5° 50.3	In 18 fathoms, $3\frac{1}{2}$ miles S.E. by E. from N. end of bank; has 3 masts, lights, and gl. bns, on main and fore. Gong. (To be altered in spring of 1879 to revol. lt., showing 2 flashes once in every minute.....	●	38   10 22   ..	1867	
<b>WICKLOW HEAD</b> One bright intermit. lt.	52° 57.8 6° 0.1	Ten secs. bright; 3 secs. dark .....	1d	121   16	1818 1867	
<b>CODLING BANK LT.-V.</b> One red rev. lt. 20 secs.	53° 3.6 5° 45.4	In 9 fathoms, at $4\frac{1}{2}$ miles S.S.E. & E. from S. end of bank; has 3 masts; globe over half globe at main. Gong .....	●	39   10	1867	
<b>DUBLIN BAY</b> <b>KISH LIGHTVESSEL</b> One rev. br. lt., 1 min.	53° 18.8 5° 56.8	In 10 fms., $\frac{1}{2}$ mile off N. end of Kish Bank. Fog-gun, 2 discharges once in every $\frac{1}{4}$ hour .....	●	38   10	1811 1865	
<b>Vanguard Wreck</b> Green revolving light every minute	53° 13.2 5° 46.7	Lt.-ves. painted gr'n 2 cables E.S.E. from the wreck of the Vanguard, which lies $8\frac{1}{2}$ miles S. 24° E. from Kish lt.-ves. Gong.....	..	..   ..	1875	
<b>Kingstown, East Pier</b> One rev. lt., $\frac{1}{2}$ min.	53° 18. 6° 8.	Tower, 41 ft. high; white and red flashes alternately. Masked N. of S.E. & S., to clear Muglin Rocks. A fog-bell .....	●	41   9	1822	
<b>Kingstown, W. Pier</b>	.....	One fixed red light.....	●	36   2	1845	
<b>North Wall, East end</b>	.....	One bright lt. A red ray to S., across river channel .....	6a	29   ..	1820	
<b>Poolbeg</b> One bright light	53° 20.5 6° 9.3	At mouth of River Liffey. Small lower lt. from half flood to half ebb. Fog Bell.....	●	68   12	1768	
<b>HOWTH-BAILEY</b> One bright fixed light	53° 21.7 6° 3.3	White to er, 42 ft. high, on S.E. pt. of Howth Peninsula. Fog Horn, 5 secs. every 20 secs.	1a	134   15	1671 1813	
<b>Howth, East Pier</b> One red light	53° 24. 6° 4.	On pier-head .....	●	43   11	1818	
<b>Balbriggan</b> One bright fixed light	53° 36.8 6° 11.	White tower, 53 ft. high, on pier, South side of entrance.....	●	42   10	1769	
<b>ROCKABILL</b> One br. and red flash. lt.	53° 35.7 6° 0.5	Tower, 105 ft. high; flash every 12 secs.; br. seaward, from S. & E. to N.E. by N.; red to westward .....	1b	148   18	1860	
<b>Drogheda</b> Two fixed br., 1 red lt. One green, five br. lts.	53° 43. 6° 15. .....	On sandhills, 8 of River Boyne. Changeable as sandbank shifts. E. & W. lts. in one, lead in on perches in inner channel .....	●	..   6	1842	

Name and Character of Light.	Lst. N. Long. W. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Dundalk</b> One flash. light, 15 secs.	53 58.7 6 18.	Red screw piles in entrance. Bright lt. seaward from E. to S. $\frac{1}{2}$ E.; thence masked over Dunany Reefs to S.S.W. $\frac{1}{2}$ W.; thence red over S.W. banks to N.N.W. $\frac{1}{2}$ W. Bright lt. to channel, but masked from N. $\frac{1}{2}$ W. to E., over N.W. sandbanks. Fog-bell 6 str. a min.	4b	33	9	1855
<b>Eight beacon lights</b>	.....	Between the bar and quay .....	...	...	...	....
<b>LOUGH CARLINGFORD</b> 1. Two bright fixed lts. 2. Two br. fixed leading lights 3. One br. rev. lt. $\frac{1}{2}$ m. 4. Red Pier light	54 1. 6 5.	1. In one tower, 111 ft. high, on Haulbowline Rock. Lower lt. from half flood to half ebb. A small red light shown to N.E. Bell 2. Two iron pile lighthouses, $\frac{1}{2}$ mile N. by W. from No. 1, 500 yards apart. In one N.N.W. $\frac{1}{2}$ W. lead through new cut in 16 ft..... 3. On Greenore Point .....	● 8a ● 8a	101 40 23 29 33	15 6 5 9 5	1828 1873 1830 1873
<b>DUNDREUM BAY</b> One intermit. red light	54 13.1 5 40.	On St. John's Point. Red 45 secs., dark 15 secs. Shaded across the bay to N. of W. by N. $\frac{1}{2}$ N.	1b	62	12	1844 1860
<b>Ardglass Harbour</b>	.....	One fixed red light at its head .....	●	18	6	1861
<b>SOUTH ROCK LT.-VES.</b> One revol. bright lt.	54 24.7 5 22.3	Supersedes S. Rock lt.-ho., and shows revol. lt. every $\frac{1}{4}$ min. In 30 fms., 1 mile E. of Ridge Shoal. Fog-gun every $\frac{1}{4}$ hour .....	..	38	10	1877
<b>Donaghadee</b> One red or br. fixed lt.	54 38.6 5 32.	On pier-head. Red to seaward, from S.S.E. to N.E.; br. lt. obscured betw. S. $\frac{1}{2}$ E. & shore	●	56	12	1826
<b>COPELAND</b> One fixed bright light	54 41.7 5 32.	A white tower, 52 ft. high, on Small Copeland Island. Fog-bell .....	●	131	16	1796
<b>Belfast Bay</b> One red lt., and others	54 39. 5 53.	Pile ltho., with red lt., on Hollywood Bank; green lt., also on the Bank; 3 more green lts. towards Belfast; and a red lt. S.W. of Stone Beacon Fog-bell.....	5a ●	27 ..	5	1848 ....
<b>Larne Lough</b>	.....	One bright lt. on Farris Point. A sector of red light is now shown over the reef off Barr Point, and over the Hunter Rock, to between E.N.E. and N.E. by E. .....	● ..	42 ..	11 9	1839 ....
<b>MAIDENS</b> Two fixed bright lights	54 55.8 5 45.3	Towers, 76 and 68 ft. high, white, with red belt. In one, N.W. by W., 800 yds. apart...	● ●	95 82	14 13	1828 ....
<b>RATHLIN</b> One interm., 1 fixed lt.	55 18.2 6 10.7	Tower, 68 ft. high, with red belt, on Altscarry or N.E. point. Upper lt. intermit., br. 50 secs.; dark, 10 secs. Shown northward, from N.W. $\frac{1}{2}$ N. to S.E. by S., and to S. on Rathlin Island, from S.W. by W. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ S. Red lt. over Carrickvanan Rock. Lower fixed lt. does not show in Rathlin Sound. A fog-gun every 15 minutes .....	lb ..	243 182	21 ..	1856 ....
<b>LOUGH FOYLE</b>						
<b>Inishowen</b> Two fixed bright lts.	53 13.6 6 55.6	E. tower, 49 ft.; W. tower, 74 ft. On Dunagreen Point. In one, West, 153 yds. apart. A red sector from W. tower, 25 ft. below br. lt. over Tuna Bank, from E.S.E. to S.E. $\frac{1}{2}$ E.	●	67 92	13 15	1837 ....
<b>Warren Point</b> Red and bright light	.....	Red to S. betw. S. $\frac{1}{2}$ S. & E. $\frac{1}{2}$ N.; white seaward from E. $\frac{1}{2}$ N. towards land, and up Lough Foyle from W. by S. $\frac{1}{2}$ S. to W. $\frac{1}{2}$ S.	..	..	..	....
<b>Red Castle</b> One fixed bright lt.	.....	On red piles, on outer edge of Ridge Shoal ...	..	25	..	1852
<b>White Castle</b> One fixed bright lt.	.....	On black piles, East side of channel.....	..	26	..	1848
<b>Ture</b> One fixed bright lt.	.....	On black piles, S.E. side of channel.....	..	25	..	1850
<b>Cunnyberry</b> One fixed bright lt.	.....	On red piles, N.W. side of channel .....	..	25	..	1848
<b>Culmore Point</b>	.....	A lantern on a mast .....	..	45	..	1848

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LOUGH FOYLE—(continued).</b>						
Culkeeragh	○	Bright light East side of entrance.....	...	50	..	1851
Boom Hall	○	One fixed bright light .....	...	12	..	1859
Rosse Bay	○	One fixed bright light .....	...	20	..	1859
Rock Mill	○	One fixed red light, near the mill .....	...	15	..	1859
<b>INNISTRAHULL</b> One br. rev. lt., $\frac{1}{2}$ min.	55 25.9 7 13.6	A white tower, 41 ft. high; on N.E. part of island .....	1b	181	18	1812
<b>LOUGH SWILLEY</b>						
Dunree Head One fixed bright lt.	55 11.8 7 33.2	Shown from a dwelling-house, visible betw. N.N.E. $\frac{1}{4}$ E. and S. $\frac{1}{4}$ E. ....	●	150	18	1876
Buncrana Pier One small red light	.....	From pillar on pier extremity, betw. N. by W. $\frac{1}{4}$ W. and W. by S. $\frac{1}{4}$ S. ....	...	..	..	1876
Fannet Point One red or bright lt.	55 16.6 7 37.9	Tower, 26 ft. high; light red seaward; bright towards the Lough .....	●	90	14	1816
<b>TORY ISLAND</b> One fixed bright light	55 16.4 8 15.	White tower, 87 ft. high, on the N.W. point of island. Obscured by island to S.S.E. ....	1a	125	16	1832
<b>ARANMORE ISLAND</b> One rev. red and br. lt. Lower red light	55 0.9 8 33.6	Tower, 76 ft. high, on Rinawros Pt. Lt. shows altern. red & br. flashes (of equal intensity) ev. 20 secs. Lower lt. red to eastward over Stag Rocks, betw. N.E. by E. $\frac{1}{4}$ E. & E. by N. ....	1b 200	233 200	25 ..	1865 1877
<b>RATHLIN-O-BIRNE</b> One fixed br. or red lt.	54 39.8 8 49.9	Tower, 65 ft. high, on W. side. Lt. is bright seaward from N.E. $\frac{1}{4}$ N. to S.S.E. $\frac{1}{4}$ E. Red towards mainland and sound .....	●	116	16	1864
Killybegs St. John's Point Rotten Island	54 34.1 8 27.6 .....	White tower, 47 ft. high. One bright fixed lt. Two fixed bright lights; in one, S.S.E. $\frac{1}{4}$ E. ....	●	98	14	1831
<b>SLIGO</b>						
Black Rock	54 18. 8 37.	One fixed bright light in the bay .....	●	79	18	1836
Oyster Island	.....	Two fixed bright lights; in one, S.S.E. $\frac{1}{4}$ E. ....	●	40	11	1837
Broadhaven One br. or red fixed lt.	54 16. 9 53.	On Gubacashel Point. White to seaward; red towards West side of harbour .....	3a	87	12	1855
<b>EAGLE ISLAND</b> Two bright fixed lights	54 17. 10 5.5	White towers, 87 and 64 ft. high. In one, E. by N. and W. by S., 132 yds. apart, clear all rocks off Black Sod Bay and Broadhaven	●	220	20	....
<b>BLACK ROCK</b> One flashing lt., $\frac{1}{2}$ min.	54 4.2 10 19.3	Tower, 50 ft. high, on W. extremity of Black Rock; red toward land, from N.E. by E. $\frac{1}{4}$ E. to S.E. by E. $\frac{1}{4}$ E. ....	1a	283	22	1864
Black Sod Quay One fixed br. or red lt.	54 5.9 10 3.6	On Black sod Point. Light bright, but red between S.W. by W. and S.W. $\frac{1}{4}$ S. ....	3a	37	10	1866
<b>CLEW BAY.</b>						
<b>CLARE ISLAND</b> One fixed bright light	53 49.5 9 59.5	On North Point .....	●	341	27	1806
<b>INISHGORT ISLAND</b>	.....	One fixed bright light .....	●	36	10	1827
<b>SLYNE HEAD</b> One rev. light, 2 min. One fixed bright lt.	53 23.9 10 14.	On Illaunimmul Island. N. light-tower, 79 ft. high. Lt. rev.; once red, and twice bright. S. light-tower, 79 ft. high; fixed light. In one, N. $\frac{1}{4}$ E., 142 yds. apart, lead outside of rocks .....	● ..	126 115	15 14	1836 ....

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>GALWAY BAY.</b>						
<b>EERAGH ISLAND</b> One rev. br. lt., 1 m.	53 8.9 9 51.5	Tower, 101 ft. high, white, with red belts, on West point .....	1b	115	16	1857
<b>Straw Island</b> One fixed <i>red</i> light	53 6.9 9 37.8	Shown betw. W. by N. $\frac{1}{4}$ N. & S.E. Vis. from inside Arran Islet. Buildings white .....	..	30	6	1878
<b>Inisheer</b> One bright or <i>red</i> lt.	53 2.7 9 31.5	Tower, 112 ft. high, with broad red belt, on S. pt. Lt. is red in direction of Finnis Rock...	1a	110	15	1857
<b>Mutton Island</b> One fixed bright lt.	53 15.2 9 3.1	On centre of island, off Galway.....	..	33	10	1817
<b>SHANNON RIVER.</b>						
<b>LOOP HEAD</b> One intermit. br. lt.	52 33.6 9 55.9	White tower, 75 ft. high, 500 yds. from extr. of head. Lt. bright 20 secs., eclipsed $\frac{1}{4}$ secs. Shown from N.E. by E. $\frac{1}{4}$ E. to S.E. by E....	1a	277	22	1853
<b>Kilcradan</b> One bright or <i>red</i> lt.	52 34.8 9 42.6	On the point. Red to seaward; bright to river .....	●	133	16	1824
<b>Scattery Island</b> One fix. br. or <i>red</i> lt.	.....	Tower on S. end of island, River Shannon. Lt. is red over Rinana Shoal, between N.N.E. and N.E. by E. $\frac{1}{4}$ E. Bright light eclipsed landward between N.E. $\frac{1}{4}$ E. and N.W. by W. $\frac{1}{4}$ W. ....	5a	50	10	....
<b>Tarbert</b> One bright fixed lt.	52 35.5 9 21.8	On the rock .....	3a	58	13	1834
<b>Beeves Rocks</b> One bright or <i>red</i> lt.	52 39. 9 1.3	Red to N. of rock. Eleven small lights below Limerick .....	3a	40	10	1854
<b>Tralee</b> One bright or <i>red</i> light	52 16.2 9 52.9	On Little Samphire Island. Br. lt. seaward, from N. $\frac{1}{4}$ W. to W. by N. $\frac{1}{4}$ N., and red over anchorage from W. by N. $\frac{1}{4}$ N. to E. by S. $\frac{1}{4}$ S. ....	4a	56	9	1850
<b>TEARAGHT ISLAND</b> Light revolving 1 $\frac{1}{2}$ min.	52 4.5 10 40.	Lighthouse, 37 ft. high. Lt. shown between S. $\frac{1}{4}$ E. to E. by N. $\frac{1}{4}$ N. ....	1b	275	22	....
<b>Valentia</b> One fixed bright light	51 56. 10 19.3	White tower, 48 ft. high, on Cromwell's Fort	●	54	12	1841
<b>SKELLIGS</b> One fixed bright light	51 46.2 10 32.7	On highest rock, 7 $\frac{1}{2}$ miles from shore. Lt. shown from lower tower, only visible to the southward between N.W. $\frac{1}{4}$ N. and E. by S. $\frac{1}{4}$ S. Upper tower not lighted .....	●	175	18	1826
<b>CALF ROCK</b> One br. flash. lt. 15 secs.	51 34.2 10 14.8	Tower red, with white belt, 102 ft. high.....	1b	141	17	1866
<b>Bantry Bay</b> One fixed bright light	51 39.2 9 44.8	White tower, 62 ft., with red belt, at East entrance to Bearhaven. Light shown from E. $\frac{1}{4}$ S. to N.W. by W. $\frac{1}{4}$ W. ....	●	55	12	1847
<b>Crookhaven</b> One bright or <i>red</i> light	51 28.6 9 42.6	On Rock Island Point. Tower, 112 ft. high, with broad red belt, on S. point. Lt. red across rocks to Streeck Head, from S. $\frac{1}{4}$ W. to S.E. by E. Bright to southward .....	3a	67	13	1860
<b>FASTNET ROCK</b> One rev. light, 1 min.	51 23.3 9 36.4	Circular white tower, 92 ft. high, with red belt, on the summit of the rock .....	1b	148	18	1864

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SWIATOI NOSS</b> One fixed bright light	68 8.8 39 47.7	Light yellow tower; a beacon tower near.....	●	298	20	1863
<b>Sosnovets Island</b> One fixed bright light	66 29.3 40 43.4	Light yellow tower, 82 ft. high .....	●	139	13	1863
<b>ARKHANGEL GULF</b> One fixed & flashing lt. every 30 secs.	65 28.2 39 44.3	Octagonal yellow lt.-ho., of wood, on Zimnia Hills, right bank of Kama River. Visible from N. 27° E. to S. 214° E. ....	●	349	20	1878
<b>JLJGINISK</b> One fixed bright light	65 12.3 36 51.5	Tower, 58 ft. high, on the N. height of island	●	140	17	1842
<b>MOUDIUGA</b> 1. One fixed bright lt. 2. Two fix. leading lts.	64 54.8 40 17. 64 51. 40 19.7	1. On a sandy hillock on W. side of island ... 2. At S. end of Moudiuga Id. Southern lt. from black tower, 57 ft. high, shown from S. by E. ½ E. by the W. to N.W. ¾ N. Northern lt. is red, shown betw. N.W. ¾ W. & N.W. ¾ N. from white tower, 13 ft. high, 470 yds. N.W. of former. Lts. in line S.E. lead over Beresov Bar .....	● 4a 6a	140 66 20	16 9 5	.... 1875 1875
<b>Bol Shoujmuia Island</b> One bright fixed light	64 40.2 35 35.5	Yellow tower, 76 ft. high, on island in Gulf of Onega.....	●	146	12	1871
<b>Solovetski</b> A fixed light	65 7. 35 37.5	Temporary lt. to N.W. from church. Fog-bell	●	410	15	1863
<b>Morjovets</b> One fixed bright light	66 45.9 42 30.	540 yds. in-shore of N.W. point of island .....	●	150	14	1842
<b>ORLOV</b> One fixed bright light	67 11.2 41 20.5	Stone tower, 64 ft. high, on N.E. point of Cape Orlov, 1,200 yds. from the beach. Fog-bell. Arkhangel pilots.....	●	222	17	1842

**NORWAY (West Coast).**

<b>FRUHOLM</b> One bright fixed light	71 5.8 23 59.4	Red iron tower, 38 feet high, with white belt, near Ingö .. Aug. 25 to March 31.....	1a	148	20	1866
<b>Hammerfest</b> One fixed bright light	70 40.2 23 40.	On extreme point of Fuglefjæs. Aug. 25th to April 19th .....	6a	30	11	1859
<b>Hekkingen</b> One bright fixed light	69 36. 17 50.5	North side of Hekking Island, Malang Fjord. August 15th to May 1st.....	4a	66	14	1859
<b>ANDENÆS</b> One fix. and flashing lt.	69 19.5 16 9.	Iron tower, red, 114 ft. high. Flash every 3 minutes. August 15th to May 1st .....	2d	143	20	1859
<b>Lodringens Harbour</b> One fixed bright light	68 24.5 16 3.	On East side of Hjertholm .....	6a	67	10	1862
<b>Stangholm</b> One bright fixed light	68 10.6 15 38.	Near Tranö-Vest Fjord.....	4a	42	11	1864
<b>LOFOTEN ISLANDS.</b> —(Lights not shown in summer, May 1st to August 15th.)						
Kjeöen, South Point	68 13.2	One fixed red light on Svolvar .....	●	54	4	1856
Orsvaag Harbour	68 11.7	One fixed bright lt. on N.E. side of Sagoen Id.	●	92	6	1862
Sjaaholmen	68 9.5	One fixed red light at Skrasven's Harbour .....	..	31	4	1856
Stamsund	68 7.2	Tornholm, South point. Keep the lt. in sight, to avoid the Stabben Rock .....	●	56	7	1859
<b>HENNINGSVÆR</b> One fixed & flash. lt.	68 8.5 14 14.0	Quitverdep, in Salvorings Sound. Flash every 3 minutes .....	●	113	16	1857
Svinö	68 2.8	One fixed red light near Balstad .....	6a	196	8	1857
Reine Harbour	67 55.8	One fix. bright lt. on S. pt. of Olenilsoens Id.	..	41	6	1862
Klopen, or Gloppeen	67 53.5	One fix. bright lt. at Sörvaagen, S. of entrance .....	6a	134	11	1857
Vaagö, or N. Hellig Vær.	67 26.	One fixed red light on N.E. point of island ...	5a	46	12	1859
Grytö, or S. Hellig Vær.	67 23.3	One fixed bright light on S.E. point .....	3a	106	17	1865
Nyholm Island	67 17.	Stone tower on E. pt. of Id. Lt. shown from Aug. 15 to April 30. In W. channel, white betw. S.W. by W. ½ W. & W. by S.; red rom W. by S. to W. In N. channel, white from N. by E. ½ E. to N.E. ½ N. .....	6a	62	8	1875
One fix. white & red lt.	14 24.					

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Visible in Miles.	Year established
<b>STÖT</b> One fixed & flashing lt.	66 56.6 13 28.9	On centre Seakier; guide to the harbour from the North. Flash every 2 minutes .....	4c	49   12   1867	
<b>TRÆ ISLANDS</b> Revol. br. lt. ev. min.	66 25.8 11 59.8	Iron lt.-ho., painted red, on 53e Id. Lt. vis. 12 secs. in ev. min. Shown from Aug. 15 to April 30 following .....	2b	119   17   1877	
<b>ANDERSEBAK ISLAND</b> One fixed red & br. lt.	66 15.8 12 19.	White concrete lt.-ho. on N.E. id. of Aas Ver Group. Lt. shows br. betw. W. by N. & N. through North to E. by S. & S.; thence red to S.E. by E. & E.; and thence br. to S. by W. & W. Br. lt. in eight bearing South of E. by S. & S. clear rocks N.W. of Aas Ver, and bearing W. by N. & N. leads South of Synst Islet. Bearing N.W. by W. & W. leads N. of Dounessö, but S. o Udoebö shoal. Lt. exhibited Aug. 15 to April 30. There is anchorage in 20 fms. close E. of Andersbak Id.	4a	50   11   1877	
<b>Brönösund</b> One fixed bright light	65 28.5 12 13.5	On North side of Buholmen, at N. entrance ...	6a	42   10   1862	
<b>Præstö</b> One fixed bright light	64 47.4 11 7.8	On the islet, in Folden Fiord. August 1st to May 16th .....	6a	36   12   1841	
<b>GJØESLINGEENES</b> One fix. red and br. lt.	64 43.8 10 51.5	White stone tower on Haraldsö Kraaka Rock. Lt. shows br. seaward betw. W. by S. leading 1 mile S. of Bregrundsfjord Shoal, and S. by W. & W.; red from S. by W. & W. to S.S.E. & E., betw. W. of Lokefald Reef and E. of Allegard Id.; white from S.S.E. & E. to E. & N., the latter bearing leading 2 or 3 cables S. of Grinna Rock; & red from E. & N. to E. by N. & N. Shown betw. Aug. 15 and April 30 following .....	4a	72   11   1877	
<b>VILLA</b> One fixed and flash. lt.	64 32.8 10 41.9	On the island. A flash every 4 min. Aug. 1 to May 16. Pilot station near .....	2d	127   20   1869	
<b>Rödö</b> One fixed bright light	64 22.5 10 27.4	On highest point of island. Aug. 1 to May 15 .....	4a	275   16   1864	
<b>HALTEN ISLAND</b> One flash. lt. ev. 4 secs.	64 10. 9 27.5	White stone tower. Lt. shown from Aug. 1 to May 15 .....	2c	127   17   1875	
<b>Trondhjem</b> One fixed bright light	63 27.5 10 27.5	On the fortress, on Munk Holm, opposite the town. Aug. 1 to May 16 .....	6a	44   18   1840	
<b>Agdenäs</b> One fixed bright light	63 38. 9 49.5	On the pt. Visible int. and out of Trondhjem Fiord. Aug. 1 to May 16 .....	..	116   9   1831	
<b>Börö</b> One fix. white or red lt.	63 44.2 9 18.	At East end of Hitteren Island, entrance of Skjören Fiord; red sector between N.E. and N.N.E. over Sles Skär .....	5a	52   9   1874	
<b>Terningen</b> One fixed bright light	63 30. 9 9.	On the island. Aug. 1 to May 16 .....	5a	160   12   1849	
<b>Ringholm Rock</b> One fixed bright light	63 19.3 8 14.5	Yellow wood tower, 30 ft. high, half a mile from E. point of Eddo. Aug. 1 to May 16...	5a	51   14   1849	
<b>CHRISTIANSUND</b>					
Stavnes One fixed bright lt.	63 6.8 7 40.2	On N.E. point of Averö. Aug. 1 to May 16 ...	5a	65   12   1842	
Leervig One fixed bright lt.	63 6.3 7 43.5	On North side of island. Aug. 1 to May 16 ...	..	..   ..   ..   1863	
<b>KVITNES</b> One fix. br. or red lt.	63 7.9 7 48.8	Wooden tower, painted white, on extr. of pt., at entr. of N. channel to Christiansund. Lt. shows red betw. W.S.W. and N.W. by N. leading N. of Haask Rock; white from N.W. by N. to N. by E. & E., leading 3 cables W. of Golmodden; and red from N. by E. & E. to E.S.E. Shown betw. Aug. 1 and May 15 following .....	5a	60   9   1877	
<b>QVITHOLM</b> One fixed and flash. lt.	63 1.3 7 14.5	Stone tower, 96 ft. high, on N.W. pt. of island. A flash of 12 secs. every minute .....	2c	134   19   1842	
Bjorne Sound One bright fixed light	62 53.9 6 49.3	On the eastern part of Møden .....	5a	94   11   1871	
<b>OHNA</b> One br. lt., red flash	62 51.8 6 33.	Red iron tower, 40 feet high, on Ohna Calif. Red flash every $\frac{1}{2}$ min. ....	2c	143   18   1867	
Ulla One fixed bright light	62 41.2 6 10.2	Fishing lt. on Kværnholm, S.W. of Ullaholm; from Jan. 25th to April 8th .....	6a	65   8   1874	

Name and Character of Light.	Lat. N. Long. E. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Lepsö Reef Lightvessel One fixed bright light	62 35.5 6 14.5	In 3 fms., on S.E. pt. of reef. Keep to westward. A bell every $\frac{1}{2}$ hour. Aug. 1 to May 16 .....	•	25	4	1858
Erkna Island	62 33.3	Red light, spring fishery light .....	6a	160	11	1870
Synnes, Wiggeren Island	62 32.5	Bright fixed light, spring fishery light .....	6a	30	9	1870
Walderhong One fixed red light	62 30.1 6 7.4	On South point of Walderö. Aug. 1 to May 16	•	41	4	1860
Aalesunds	62 28.7	One red fixed light on Moloen Point .....	•	12	5	1863
Alnes, Godö Island	62 30.	Bright fixed light, spring fishery light .....	6a	30	9	1870
Hogsten One fixed and flash. lt.	62 28. 6 1.5	Flash every 3 min. On S.E. of Godö Island, Bred Sound .....	4d	41	12	....
RUNDÖ One fixed bright light	62 25. 5 35.1	Iron tower, 98 ft. high, white, with red belt, on W. point of island, Bred Sound. Aug. 1 to May 16 .....	1a	161	23	1858
Flisevär One fix. or changing lt.	62 18.8 5 36.5	Bright lt., except towards Skilaggen, when it changes to red every 3 secs. ....	•	56	12	1870
Frekö Island One fix. br. and red lt.	62 10.5 5 22.7	Bright lt. from white tower, via. betw. N. by W. $\frac{1}{2}$ W. and E. by N. $\frac{1}{2}$ N., but red from N.W. $\frac{1}{2}$ N. to N.W. by W., and from E. $\frac{1}{2}$ S. to E. $\frac{1}{2}$ N. From Aug. 1 to May 15 Fog-bell	..	68	11	1876
Wägsö One fixed red light	62 2. 5 7.8	On Skog Näs, N.E. point of island. Over Kreks and Melhus Shoals; or from N. by W. $\frac{1}{2}$ W. to N.N.W. $\frac{1}{2}$ W. It is eclipsed every 2 or 3 secs. From Aug. 1 to May 15 .....	..	57	12	1870
Hjertnesstrand One bright fixed light	61 39. 5 10.	On East side of Ulve Sound .....	6a	58	10	1870
Snörvahn One red or bright light	61 45. 4 55.	On Froesoen. Lt. red from N.N.W. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ N.; thence bright to E. $\frac{1}{2}$ S. ....	3a	..	..	1871
Stabben One fixed light	61 36. 4 57.6	Bright lt.; red towards Florö from E. $\frac{1}{2}$ S. ....	5a	50	12	1867
Kind Island One bright fixed light	61 33.6 4 46.7	On S.E. part. Shown eastward between N. by E. to S. by W. ....	6a	33	10	1867
Bonglevär One fixed br. or red lt.	60 48. 4 48.	On Bratholm. Bright seaward, but red to S. channel, or from S. $\frac{1}{2}$ W. to S.S.W. ....	6a	53	10	1870
HELLISÖ One br. rev. lt., 1 min.	60 45.1 4 43.1	Iron tower, 100 ft. high, red, with white belt. Beyond 8 miles it is dark between flashes ...	2b	154	19	1858
SKJELLANGER One fixed bright light	60 36.6 4 57.2	N.W. side of Holzenö Island. Guide to N. channel to Bergen. July 15 to May 16 .....	5a	58	13	1858
Bergen One fixed red light	60 24. 5 18.3	On mole. Guide to Vaagen and chief anchor- ages. Aug. 15 to April 30 .....	•	41	4	1839
Leeröen One fixed bright light	60 14.3 5 10.3	West side of island. Shown westward, from S. by W. to N.E. $\frac{1}{2}$ N. Obscured over Roug- nene. July 15 to May 16 .....	•	57	4	1855
MARSTENEN ROCK One revolving red light	60 7.8 5 1.	Stone tower on highest part of Id., at Kors Flord entr. Flash of 8 secs. every 20 secs....	b	120	17	1877
Piir Holm One fixed bright light	60 5.2 5 11.5	Bagholm Sound. July 15 to May 16 .....	•	32	4	1849
Öxhammar One fixed bright light	59 59.3 5 13.7	East side of Selbö. Eclipsed in direction of Nyaleden over an arc of $17^{\circ}$ . July 15 to May 16 .....	•	130	4	1860

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SLOTTERO</b> One fixed bright light	59 54.5 5 4.5	Iron tower, 72 ft. high, red, with white belt en N.W. pt. of islet. S. entrance to Selbø Fjord .....	2a	152	18	1859
<b>Kingholmen Island</b> One fixed bright light	59 53.2 5 13.3	Lt.-ho. on W. end of id. Lt. vis. from N. $\frac{1}{2}$ W., clearing Tranø Id. to S. $\frac{1}{2}$ E. From July 15 to May 15 .....	4a	80	10	1876
<b>Folgerøen</b> One fixed bright light	59 48. 5 18.7	On island at Stoksund. July 15 to May 16 ...	•	51	4	1855
<b>Leervig</b> One fixed bright light	59 46.8 5 32.9	S.E. coast of Stordøen Id. From gable of white dwelling on S. pt. of Midtø Islet. Lt. shown betw. S.W. by W. and N.N.E. July 15 to May 15 following .....	5a	49	9	1878
<b>Midtholmen</b> One fixed red light	59 42. 5 24.2	Mosterhavn. Shown eastward, from N.N.E. to S.W. by W. July 15 to May 16 .....	•	39	4	1855
<b>Langevaad</b> One fixed bright light	59 36.7 5 15.2	Lille Blegen. East side of Bommelø Island. July 15 to May 16 .....	•	16	3	1855
<b>Espevär</b> One fixed bright light	59 35.1 5 9.3	S. entrance of harbour. Oct. 1 to April 1.....	•	75	6	1849
<b>Byvarden</b> One bright fixed light	59 31.7 5 13.6	On point leading into Bommel Fjord. July 15 to May 16 .....	•	63	6	1849
<b>Roesar</b> One fixed bright light	59 26.1 5 7.6	On Gitterø Rock, East side of entrance. Shown eastward, from N. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S.....	•	92	6	1860
<b>Särhoug</b> One fixed bright light	59 25.2 5 14.7	On rock at N. entrance of Karmø Sound .....	5a	72	12	1846
<b>Höiørvarde</b> One fixed bright light	59 19.5 5 19.5	East side of Karmø .....	•	65	6	1858
<b>Fæø</b> One fixed light	59 22.7 5 10.7	Bright lt., but is red over Gangvar Rock .....	..	45	9	1871
<b>UDSIRE</b> Two fixed bright lights	59 18.3 4 52.7	Two red stone towers, 40 ft. high, on W. side of island. N.W. and S.E., 220 yards apart, throughout the year .....	2a	255	21	1844
<b>Kobbervig</b> One fixed red light	59 17.2 5 19.7	On E. side of Karmø; on N. side of entrance...	•	31	3	1863
<b>Bukke Sund</b> One fixed bright light	59 13.4 5 27.6	E. side of Bukken Island. Oct. 1 to April 1...	•	..	4	1849
<b>Skudes Ness Havn</b>	.....	One fixed bright light. Oct. 1 to April 1 .....	..	..	4	1849
<b>Skude Ness</b> One fixed bright light	59 8.4 5 18.	S.E. point of Karmø. Kept in sight, clears the Ostboen. Oct. 1 to April 1.....	•	77	6	1799 1840
<b>Vigholmen</b> One bright red light	59 8.4 5 16.8	On islet, off Skudes Ness Harbour; must be kept in sight, on the port hand, when ap- proaching .....	•	..	4	1849
<b>Fieldø</b> One bright fixed light	59 5.3 5 34.4	On Vindhøg, Klubben Islet, North side of channel to Stavanger. July 15 to May 15 ...	•	..	6	1849
<b>HVIDINGSSØ</b> One fixed and flash. lt.	59 3.7 5 24.4	White stone tower, 85 ft. high. Bright flash, every 4 min., throughout the year .....	2d	149	21	1700 1853
<b>Dusevig</b> One bright fixed light	58 59.8 5 41.3	On Varnes, S. point of bay. For pilots' use...	•	..	6	1865
<b>Stavanger</b> One bright fixed light	55 58.2 5 44.3	On Valberg tower. Sept. 15 to March 15 .....	•	..	4	1862

Name and Character of Light.	Lat. N. Long. E. ° ,'	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Tunge Ness</b> One bright fixed light	59 2.1 5 34.2	On S. part of Bukke Fiord; on West side of channel to Stavanger. July 15 to May 15.	6a	31	10	1828
<b>Fladholmen</b> One fixed bright light	58 55.3 5 33.7	On N.W. point; eastward of Rot.....	6a	43	10	1862
<b>Lille Feisteen</b> One fixed red light	58 49.5 5 30.9	On S.E. pt. of islet, at $\frac{1}{2}$ miles N.E. from Joederens Point. All the year .....	4a	68	12	1859
<b>Obrestadbrakka</b> One fix. & flash. lt. $\frac{1}{2}$ m.	58 39.5 5 33.5	On gable of stone-house; lt. obscured to S. to $\frac{1}{2}$ mile from land off pt. near Haa. Life-boat	3c	109	16	1873
<b>EGERÖ</b> One fixed bright light	58 26. 5 52.2	Iron tower, 105 ft. high, red, with white belt, on W. point of island. Throughout the year	1a	154	24	1864
<b>Grundsund Holm</b> One fixed br. light	58 27.8 5 53.1	On N.W. point of island, on S. side of channel S. of Egerö. Throughout the year.....	5a	43	11	1855
<b>Vibberodden</b> One fixed br. light	58 25.3 5 59.6	S.E. point of Egerö, West side of Egersund...	6a	73	12	1855
<b>Varnäs</b> One fixed bright light	58 10.6 6 37.3	South point of entrance to Lister Fiord .....	5a	90	12	1886
<b>LISTER</b> One br. flash. lt. 4 secs.	58 6.5 6 34.2	One flashing lt. every 4 secs., instead of three fixed lights on Gunnarshoug, West point of Lister Land. Throughout the year. Fog-trumpet 2 blasts once in every minute .....	2a	130	19	1853
<b>South Katland Islet</b> One fixed red or br. lt.	58 3.5 6 50.6	Farsund Channel. Shown from wh. bldng. at S.W. pt. of islet, br. seaward betw. S.W. and S.E., red betw. S. and S.S.E. $\frac{1}{4}$ E., & br. from S.S.E. $\frac{1}{4}$ E. to E. Also br. to northwd. betw. N.W. by W. $\frac{1}{4}$ W. and N. $\frac{1}{4}$ E. and towards Faerokalven betw. W. and W. $\frac{1}{4}$ N. At N. extr. of Faerokalven a reflector is placed to reflect a sector of 120° of light towards E.N.E.	4a	51	10	1878
<b>NAZE OF NORWAY, or LINDESNAES</b> One fixed and flash. lt.	57 59. 7 3.	White and red tower, 33 ft. high. Flash every minute. Throughout the year .....	1d	164	24	1858
<b>Mandals Ryvingen</b> One bright lt., red flash	57 58.1 7 29.7	On S.W. part of Ryvingen; red flash every half minute.....	3d	135	18	1867
<b>Hatholm</b> One bright fixed light	58 0.2 7 27.2	On S. point of island, in Manne Fiord .....	6a	64	10	1867
<b>CHRISTIANSAND FIORD</b>						
<b>Odderö</b> One fixed bright lt.	58 8.2 8 0.5	On S.W. point of island .....	..	27	10	1832
<b>OXÖ</b> One fixed bright lt.	58 4.4 8 3.6	Round white tower, 92 ft. high, on S. pt. of island, entrance of Christiansand Fiord .....	2a	139	19	1853
<b>Gronningen Islet</b> One fixed red light	58 5.1 8 5.8	Christiansand Fiord, E. side of entr. White building on summit of islet. Light shown westward between S.E. and N.N.W. .....	4a	50	9	1878
<b>Arendal</b> One fixed bright light	58 26.3 8 47.4	Yellow building on Sandvig Point, W. side of channel. The lt. is red to W. of S. $\frac{1}{4}$ E. ....	6a	43	11	1844
<b>TORUNGEN ISLANDS</b> Two fixed bright lights	58 24.1 8 47.7	On Outer Torungen and Inner Torungen, N.N.E., 1,200 yards apart .....	2a	134	20	1844
Stangholmen Island One fixed red light	58 42.7 9 15.	Yellow building on East point. Light shown from N. $\frac{1}{4}$ E. by N. and E. to S. $\frac{1}{4}$ W. ....	5a	34	10	1855
Kills Fiord Two red fixed lights	.....	One on Stafseng; one on Strømtangen, near Rabbet Point. In one, lead through Stango Channel.....	5a	80	7	1874
			6a	25	6	1874

Name and Character of Light.	Lat. N. Long. E. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
JuMFRLAND	58 52.2	White tower, 86 ft. high, on a low island.	2d   134   20   1839			
One br. rev. lt., $\frac{1}{2}$ min.	9 36.3	Dark between flashes beyond 8 miles. Fog-trumpet 3 times in a minute .....				
Langötangen	58 59.7	Yellow building on S. pt. of island. Lt. shows	6a   41   10   1839			
One fix. br. or red lt.	9 45.8	bright betw. S.S.W. and S.S.E. $\frac{1}{2}$ E., & red over dangers outside those bearings. Obscured to northward.....				1876
Frederiksværn	58 59.5	Stavernsø South point, East side of channel, visible eastward from N. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ W.	6a   140   8   1855			
One fixed red light	19 45	July 15th to June 1st .....				
SVENÖER	58 58.5	At the entrance to Larvik Fiord white light-house. Two consecutive bright flashes of 5 secs. every 2 min. ....	3a   89   15   1874			
One bright flashing lt.	10 9.5					
CHRISTIANIA FIORD.						
Færder	59 2.	Red tower, 134 ft. high, with white belt, on Lit. Færder, or Tristeman. Fog-whistle...	1a   154   24   1857			
One fixed bright lt.	10 32.1					
Torhørnskier	58 59.7	Stone tower on rock, on E. side of Christiania Fiord entr. Bright lt. with red flash every minute. Fog-bell, 5 strokes once ev. min.	5c   90   15   1872			
One fix. & flashing lt.	10 47.5					
Homlungen	59 1.4	West side of entrance to Lærensvæg. Shown from W. by N. $\frac{1}{2}$ N. by S. to E.S.E.....	6a   24   8   1867			
One fixed bright lt.	11 2.2					
Torgauten Island	59 9.1	On S. point. Shown from W. $\frac{1}{2}$ S., by S., to N.W., and is red over Strudskrakkene Rocks	6a   37   12   1859			
One fixed bright lt.	10 50.					
FULEHUK ISLAND	59 11.	White tower, 41 ft. high. Flash every 3 min. Fog-bell sounded 45 secs., interval 15 secs....	4d   57   14   182			
One fix. & flash. lt.	10 36.7					1850
Torgarsø	59 15.5	On N.W. point of island. July 15th to June 1st	..   10   3   1851			
One fixed red light	10 30.9					
Moss Havn	59 26.4	East side of canal. October 1st to March 31st	..   10   3   1857			
One fixed red light	10 39.8					
Bastø	59 23.3	Yellow building on N.E. point of island. Shown to N. and E., from N.N.W. to S. by W. $\frac{1}{2}$ W.	6a   38   12   1840			
One fixed bright lt.	10 33.					
Rød Point	59 31.9	East side of entrance to Drams Fiord. July 15th to May 31st.....	•   35   6   1840			
One fixed bright lt.	10 26.3					
Filtvedt	59 34.7	On W. shore. July 15th to May 31st. Fog-bell.....	•   24   6   1840			
One fixed bright lt.	10 37.7					
Drobak	59 39.5	From Custom-house. Shown westward betw. S. $\frac{1}{2}$ W. and N.N.W. July 15 to May 31.	•   23   6   1878			
One fixed red light	10 38.2					
Digerhovedet	59 43.5	On E. side of Fiord. Lt. is red from S.W. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ W.; thence bright by W. to N.N.W. July 15th to May 31st. Fog-bell.....	..   ...   ...   ....			
One fix. br. or red lt.	10 35.8					
Steilene Island	59 49.4	On middle of island. Shown to E. and S., from N.N.E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S. July 31 to May 31. Fog-bell .....	6a   22   6   1837			
One bright fixed lt.	10 36.5					
Heg Holm	59 53.1	New yellow tower on N. pt. of principal channel to Christiania. Lt. vis. betw. W.S.W. & E. $\frac{1}{2}$ N. July 15th to May 15th. Fog Bell altern. 2 and 15 strokes .....	6a   20   6   1826			
One red fixed light	10 43.5					1876
Dynen Rock	59 53.7	White wooden building. Lt. shown between E. by N. and W.S.W. July 15 to May 31... Fog-bell	6a   18   8   1875			
One fixed bright lt.	10 41.9					

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Visible in Miles.	Year established.
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## SWEDEN.

<b>WORD KOSTER</b> One fixed and flash. lt. One fixed bright light	58 54.2 11 0.6	North and South, 78 yds. apart. North lt. flashes every 3 min. Shown to South from S.E. to N.E.....	3c 4a	214 ..	15 ....
<b>WÄDEROBÖD</b> One red & bright rev. lt.	58 32.7 11 2.3	Bed iron lighthouse, 62 feet high, lt. red and bright alternately, every $\frac{1}{4}$ minute. Gong	2b	108 45	1867
<b>HÄLLÖ</b> One br. flash. lt., 5 secs.	58 20 2 11 13.4	Tower, 66 feet high, half a mile S.E. from Salö beacon .....	2b	128 20	1868
<b>Mäseskär</b> One fixed red light	58 5.8 11 20.	Iron tower, 72 ft. high, red & white, near Pilot-station of Karingö. Two guns in answer to fog-signal .....	2a	114 10	1866
<b>PATERNOSTER ROCKS</b> One rev. bright light	57 53.8 11 28.6	Bed iron ltho., 105 ft. high, on the Hamnakär. A bright flash every $\frac{1}{4}$ min. Fog-bell .....	1b	117 20	1868

## THE KATTEGAT.

<b>Marstrand</b> One fixed bright light	57 53.6 11 35.	On Koön; W. point of entrance. Shown seaward from N. $\frac{1}{2}$ E. to W. $\frac{1}{2}$ N. ....	5a	..	..
<b>Götheborg</b> One br. or red fixed lt.	57 41.2 11 50.5	On Fort Elfsborg; North side of channel .....	●	44	10
<b>WINGA, or Vinga Island</b> One fixed and flash. lt. One fixed bright light	57 38.1 11 36.3	N.E. $\frac{1}{2}$ N., and S.W. $\frac{1}{2}$ S., 138 yds. apart. N.E. lt. flashes every 3 min. Powerful fog-horn; signal-guns .....	4c 4a	88 88	14 15
<b>Gefveskar</b>	.....	One fixed red light.....	●	20	..
<b>Buskär Islet</b> One fixed red light	57 38.3 11 40.8	From red house at entrance to Götheborg. August 15th to April 15th .....	●	82	10
<b>Böttö</b> One fix. & flash. br. lt.	57 39. 11 43.3	On a house; in Winga Sound. Shows as flashing lt. betw. S. $15^{\circ}$ W. & S. $35^{\circ}$ W., fixed from S. $35^{\circ}$ W. to S. $55^{\circ}$ W., flashing from S. $55^{\circ}$ W. to S. $75^{\circ}$ W., and fixed over remainder of circle. Aug. 15 to April 15 .....	●	45	10
<b>NIDINGEN ROCK</b> Two fixed bright lts.	57 18.5 11 53.5	Stone toers, each 60 feet high, E.N.E. and W.S.W., 98 ft. apart. Fog-bell in a steeple to N.W. Three guns in answer to fog-signals .....	3a 3a	66 66	12 12
<b>Warburg</b> One flashing lt. $\frac{1}{4}$ min.	57 6.3 12 13.5	Iron tower, 54 ft., chequered red and white. A red and white flash every $\frac{1}{4}$ minute .....	3b	70	12
<b>MORUP TÄNGE POINT</b> One fixed bright light	56 55. 12 22.	Iron tower, 90 ft. high, white, with two red belts, on the point, N.W. of Falkenberg ...	2a	95	16
<b>Halmstad</b> One red fixed light	56 39.5 12 51.3	On W. pier head; to be kept to port. Not accessible in bad weather .....	●	..	4
<b>Tylö</b> Flash. lt. every 10 secs.	56 38.8 12 42.	On tower, 42 ft. high, on Labholm Islet, West of Halmstad .....	3c	56	12
<b>KULLEN</b> One rev. bright light	56 18.2 12 27.	White tower, on hill-side, at Arildalige. Lt. revolves once in ev. 3 min., showing a brighter light for about 30 secs. while the reflector backs the flame .....	●	288	20
<b>SVINBADARNE LT.-V.</b> Two red fixed lights	56 10.5 12 30.7	Lt.-Ves. on W. side of Jung:se Shoal. Two masts, with red ball on each. Fog-trumpet; 8 blasts once every $\frac{1}{4}$ minute. Lightvessel temporarily removed, December 1878 .....	●	26	6

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
Helsingborg One fixed red light	56 3. 12 42.	Iron tower, 23 ft. high, on N. pier-head.....	•	27	7	1833 1866
Rää, near Helsingborg	.....	A fishing light, bright and green .....	..	..	..	....
Helsingör, or Elsinore 1. One bright fixed lt. 2. One fixed green lt.	56 2 1 12 37.4	1. On N.E. tower of Kronborg Castle..... 2. On South pier .....	4a •	110 17	12 7	1772 1830
NAKKE HEAD Two fixed bright lights	56 7 2 12 20.8	On N.E. point of Sjælland, W.N.W. & E.S.E., 438 yds. apart .....	• ..	147 98	12 8	1772 ....
HIELM ISLAND One fixed and flash. lt.	50 8. 10 48.5	Flash every 4 min. A white flag, with blue stripes, when ice in the Great Belt .....	2c	164	18	1866
Spotsbierg One flashing light	55 58.6 11 51.6	On East side of entrance to Ise Fiord. Flash every 20 secs. .....	..	123	11	1865
HESSELÖ One fixed bright light	56 11.8 11 42.8	Tower, 56 ft. high; red and yellow bands.....	2a	115	16	1855
SCHULTZE GRUND L.-V. Two bright fixed lights	56 8.9 11 11.1	At the entrance to the Belts. Two masts; red ball on each .....	• •	30	10	1869 ....
FORNESS One rev. br. lt., $\frac{1}{2}$ min.	56 26.6 10 57.6	$\frac{3}{4}$ miles N.E. & E. of Greema Haven .....	•	69	13	1838
Anholt Lightvessel One fixed bright light	56 45.7 11 51.3	In 16 fathoms, 1 mile East of Knob Reefs. Gong in fog .....	•	26	9	1842
ANHOLT ISLAND One rev. br. lt., 25 secs.	56 44.3 11 39.2	Tower, 103 ft. high, $1\frac{1}{2}$ mile from E. point. A fixed lt. is shown to E., 57 ft. lower, when lightvessel is not in her station.....	•	122	14	1852
Kobbergrund Light-Ves. Three bright fixed lts.	57 8.9 11 22.8	In 10 fathoms, S.E. by S., from Nyvager. Lights triangular .....	• ..	41 29	8 ..	1853 ....
LIIM FIORD 1. Two fixed bright lts. 2. Two fixed red lights	..... .....	1. Shown at Egense Kloster Point. In line, N. 52° W., lead over bar into Liim Fiord ... 2. On Hals Pier. In line, lead up to Hals road- stead .....	.. ..	..	..	1878 1878
Lessoe Charnel Lt.-V.s. One fixed bright light	57 12.7 10 41.2	In 10 fathoms, East of Dvale Ground Gong ...	•	30	9	1852
Lessoe One fixed red light	.....	On South mole of the harbour, on N.W. coast of Lessoe .....	..	15	..	1872
Trindelen Lightvessel One fixed bright light	57 25.8 11 16.6	In 7 fathoms, $\frac{1}{2}$ mile E.S.E. from shoal; a red ball at the fore. Gong or Fog-trumpet, giving 2 blasts once in ev. 2 min., in fog ...	•	31	9	1829
Frederikshavn One fixed red light	57 26.1 10 32.7	On S. pier-head of Fladstrand; also a bright lantern light .....	•	23	8	1834
Hirtsholm One rev. br. lt., $\frac{1}{2}$ min.	57 29.2 10 37.6	Low white quadrangular tower.....	•	43	10	1838
Aalbek	.....	Two red fishermen's lights.....	•	12	5	1846
SKAGEN, or SCAW One fixed bright light	57 44.1 10 37.9	Red brick tower, 126 ft. high, $\frac{3}{4}$ mile West of point. Ice signals shown. Light brightest between W. & S. and S.W. & S. ....	1a	144	18	1864 1866
SKAGEN or SKAW LT.- VESSEL One rev. red lt. ev. $\frac{1}{2}$ m.	57 46.0 10 43.3	Painted red with white cross, red globe on fore- mast head. Moored at extr. of Skaw Spit in 20 fms., $\frac{3}{4}$ miles N. 71° E. from Skaw light- house. Fog-trumpet, 1 blast every 2 min....	..	31	..	1878

Danish lightvessels will remain at their station as long as the ice permits, and from the forestay of each lightvessel a bright riding light is shown at 6 ft. above the rail.

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>THE SOUND.</b>						
Landskrona Two fixed lights	55 52. 12 49.8	On quay, on North side of harbour. In one, E. by S. & S., lead small craft in. Inner lt. red	•	22	8	1866
Helsingør, or Elsinore 1. One fix. lt. red flash. 2. One green fixed lt.	56 2.1 12 37.4	1. On N.E. tower of Kronslott, or Kronborg Castle. Fixed bright light with red flash every half minute 2. On South pier	3c •	110 17	15 4	1772 1830
HVEEN ISLAND One bright flashing lt.	55 55.2 12 40.5	On N.W. pt. of Id. The tower is white, 29 ft. high. Lt. shows a bright flash every 10 secs., not visible East of S. by E. & E.	4b	98	12	1871
Vedbek Two bright fixed lights	55 51. 12 34.5	In one, W. & S., show direction of telegraph cable	•	40	10	1855
Taarbek One green light	55 47. 12 36.	On North mole, from Aug. 1 to Jan. 1	..	15	..	1871
Skovs Head Harbour	55 45.	One red light on South breakwater	..	..	..	1870
<b>COPENHAGEN</b>						
Tre Kroner Battery 1. One fix. & flash. lt. 2. Two red leading lights	55 42.2 12 37.1	1. Flash every 3 min., E. side of Tre Kroner battery 2. From small iron towers on Tre Kroner battery, 185 yds. apart. In line, N. 29° W., lead through Konge Deep	4d .. ..	41 47 37	11 11 10	1858 1877 ....
Provestenen Battery Two red leading lts.	.....	From poles. In line, S. 15° W., lead between Middel Ground and Middel Pult	..	43	5	1877
NORTH ROSE SHOAL One fix. & flashing lt.	55 38.2 12 41.4	Granite tower, in 14 ft. water, 1 mile S.E. by E. from Kastrup Harbour. Fixed bright light with red flash every 30 secs.	3c	45	10	1877
Dragør or Drogden Lt.-V. One rev. light, 20 secs.	55 33.2 12 43.2	200 yds. S.W. by S. of Quarts Ground, in 4 fathoms. Going in fogs. Pilots on board	•	31	10	1838 1868
Dragør Harbour 1. One red fixed light 2. Two red leading lts.	55 36. 12 40.5	1. On North pier 2. From small towers, 412 yds. apart, at N. end of t'wn. In line, S. 18° W., lead through N. end of Hollaender Deep	.. ..	.. 62 31	2 12 10	1869 1877 ....
Lomma Two fixed green lights	55 40.6 13 4.5	E. & N. and W. & S., 33 yards apart. In line lead up to entrance	.. ..	20 15	..	1876 ....
MALMÖ Bright red & green fixed lights	55 36.8 12 59.8	Bright lt. from tower, 44 ft. high, on W. pier-head. A br. lt. is also shown from mast with triangle, on new W. mole-head constr. Red & green leading lts. exist, but are to be superseded by new leading lts. Pilots	• ..	49 19	8 ..	1822 1878
Sjællan Bank Lightvessel One fixed bright light	55 38.3 12 57.3	Lt.-ves. red, moored 1 mile E. of bank. Fog Bell, 3 strokes once a minute Pilots	4a	22	8	1876
Kalk Grund Lightvessel One fixed red light	55 36.5 12 54.3	Flint Channel. Vessel painted red, with red ball at mast-head; moored $\frac{1}{4}$ mile S.E. of Kalkgrund. Fog Bell, 3 strokes once a minute	..	..	..	....
FALSTERBO One fixed bright light	55 23.7 12 49.3	Stone tower, 82 ft. high, with two red belts, within the reef, on point S.W. of town. Aug. 1 to May 15	2a	78	13	1843
Falsterbo Lightvessel Two fixed bright lights	55 18.2 12 47.6	In 5 fathoms, $\frac{1}{2}$ mile S. of extreme point of reef. Two masts and balls. Fog Bell	•	37	8	1844 1865
Kjøge Pier Two fixed bright lights	55 27.1 12 11.5	On two masts; in one, lead into the harbour. Pilots obtained here	• ..	39 33	6 ..	1842 ....
STEVNS CAPE One rev. br. lt., $\frac{1}{2}$ min.	55 17.4 12 27.5	1,506 yds. N.E. of Høierup church. New white stone tower, 72 ft. high (1878), close to old lighthouse	•	209	20	1818
Faxo One green light	55 13. 12 10.	On East pier-head. Shows bright towards Bogestrom Bay	•	18	6	1867
Rodvig One red light	55 15.1 12 22.9	On eastern end of jetty	•	18	2	1860
MØEN ISLAND One fixed bright light	54 56.8 12 32.7	On S.E. point	5a	82	12	1845
GIEDSER POINT One fixed bright light	54 33.8 11 58.	Tower, 33 ft., $\frac{1}{2}$ mile inland of South point of Falster. The dangerous Trindelen Ground bears S.E. & S.	3a	66	12	1802 1851
Giedser Reef Lt.-vessel Rev. red lt. ev. $\frac{1}{2}$ min.	54 28 12 9.5	Painted red with white cross, red ball at fore-mast head. Moored in 6' ms. near S.E. ext. of reefs. Fog-trumpet (worked by hand), 1 blast every minute	..	31	..	1878

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>GREAT BELT.</b>						
<b>SEIRÖ</b> One rev. br. lt., 2 min.	55 55.2 II 5.1	Tower, 52 ft. high, on N.W. point of island ...	●	108	15	1852
<b>REFEYNESS</b> One fixed bright light	55 44.6 II 52.4	On extreme point. Shown from E. & S. to S.E. by S. by the South .....	4a	65	13	1844
<b>Kallundborg</b> One fixed bright light	55 41.2 II 5.1	On Gisseløre Point.....	●	25	9	1835
<b>Odense Fiord</b> One bright fixed light	.....	On Hals Point, West point of entrance .....	..	..	..	1870
<b>Romsøe</b> One fixed red light	55 30.8 II 48.3	Octagonal tower, 21 ft. high, on E. coast of island.....	5a	51	7	1869
<b>Halskov</b> One fixed bright light	55 20.3 II 7.6	Near Korsør. A second light is shown occasionally.....	●	52	10	1727
<b>Korsør</b> Two fixed bright lights	55 20.2 II 8.5	Two white towers on N. side of harbour; in line they lead in.....	●	34	9	1793
<b>SPROGÖ</b> One rev. br. lt., 2 min.	55 19.9 II 58.4	Tower, 48 ft. high, yellow and red bands, on East and highest point.....	●	134	17	1868
<b>Knuds Head</b> One fixed bright light	55 17.4 II 51.3	.....	5a	60	10	1750
<b>Slipshavn</b> One fixed red light	55 17.1 II 49.7	On Slips Point Battery, Nyborg Fiord .....	●	20	8	1845
<b>Nyborg Harbour</b>	.....	Two fixed red lts. on pier-head, when the mail is expected. Two fix. br. lts., shown from white sheds on fortress ground, W. of Nyborg Harbour. In one N. & W. lead into bay	..	..	..	...
<b>Agorsö</b> One fixed red light	55 11.1 II 12.7	S. point of Helleholm, Omø Sound .....	●	25	8	1846
<b>Væirö</b> One rev. br. lt., $\frac{1}{2}$ min.	55 2.3 II 22.3	Square tower, 29 ft. high, on N.E. point of island.....	●	51	10	1845
<b>Tranekjær</b> One bright fixed light	54 59. II 53.	To S.E. of Tranekjær Castle, on E. coast of Langeland .....	●	27	9	1858
<b>Taars</b> Two fixed bright lights	54 52.7 II 2.2	On N.W. point of Laaland. East lt. seen all round. West lt. through channel. E. & S. 663 yds. apart. In one, lead in.....	●	32	8	1857
<b>Svendborg</b> Two fixed bright lights	55 3.5 II 37.	On the pier, October to March. Also green and red lights for mail boats .....	..	14	6	1854
<b>Gaabense</b> Two fixed lights	54 56.5 II 53.	On North coast of Falster; for mail boats.....	●	12	4	1857
<b>Vordingborg</b> Three fixed lights	55 0.2 II 55.2	On S.E. coast of Sjælland; for mail boat .....	●	..	4	1857
<b>Bagenkop</b> One red fixed light	54 45. II 40.4	On N. pier-head. Sept. 1 to March 1.....	..	16	4	1869
<b>FAKKEBIERG</b> One bright fixed light	54 44.4 II 42.2	On a hill, 1 mile from the S. point of Langeland	●	129	14	1806

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LITTLE BELT.</b>						
<b>Aarhус</b> 1. One fixed bright lt. 2. Three fixed br. lts.	56 9.3 10 13.5	1. On S. end of mole. Red lt. also, occasionally, on N. pier ..... 2. Three lts. placed on a triangle; the two forming the base when in one lead into channel .....	●   39   6   1846			
<b>Sletterhage Point</b> One fixed bright light	56 5.7 10 31.	On gable of new building on point; S.W. point of Helgænæs.....	6a   54   11   1872			
<b>Thunø</b> One fixed bright light	55 57. 10 26.8	On church tower, 53 ft. high, on S.E. end of island.....	5a   100   11   1846			
<b>Horsens</b>	.....	Two gas harbour lights .....	..   28   6   1858			
<b>SAMŞÖ</b> One fixed and flash. lt.	55 46.2 10 33.4	Round tower, 45 ft. high, on Vestborg, or S.W. point of island. Flash every third min. ....	3d   118   15   1858			
<b>Røgenæs</b> One red fixed light	55 34. 10 5.1	On pier, North coast of Fyen.....	●   20   3   1861			
<b>Fredericia</b> One red fixed light	55 33.6 9 45.7	On North mole .....	..   28   4   1842			
<b>Middelfart</b>	.....	Light on pier-head, on dark nights .....	●   18   3   1854			
<b>Baagø</b> One fixed bright light	55 17.7 9 48.	On S.W. point of island .....	●   39   ..   1842			
<b>Assens</b> One fixed bright light	55 16.3 9 53.6	White iron tower, 17 ft. high, on pier-head .....	●   20   5   1777			
<b>Aarø</b> One bright fixed light	55 15.7 9 42.9	Slesvig, E. coast. Tower, 81 ft. high, on S. mole. A lantern light, on S. end of Aarø Island, when packets pass .....	●   26   9   1777			
<b>Apenrade</b> One red fixed light	55 2.5 9 26.	On S. mole in harbour, till 1 a.m. Sept 15 to April 1 .....	●   16   3   1850			
<b>Ærøskjøbing</b> One fixed light	54 53.4 10 25.6	On ship quay. Sept. 5 to May 1 .....	●   16   4   1850			
<b>Als Island</b> One bright fixed light	54 51.3 10 25.6	Square tower on Keke Ness, or S.E. point.....	4a   78   12   1845			
<b>Flensborg Fiord</b> One fixed bright light	.....	From lightvessel moored off N. side of Kalkgrund, S. side of entrance. Pilots .....	6a   26   7   1878			
Sønderborg Two red lights	54 55. 9 48.3	On poles, near the castle. In line, lead in ...	●   19   3   ....			
Flensborg One green light	54 47.8 9 27.7	At the landing place. Also a red lt. for small steamer .....	..   15   3   ....			
Sliminde One red fixed light	54 40.2 10 2.5	Tower, 44 ft. high, on mole, N. of harbour ...	●   49   12   1841			
Eckernförde One bright fixed light	54 28.2 9 50.3	On the pier-head. When bearing N.W. by N., shows best anchorage .....	●   ..   ..   ....			
<b>KIEL FIORD; Bulk Pt.</b> One bright fixed light	54 27.4 10 11.9	Circular tower, 77 ft. high, on W. pt. of entr. to Kiel Fiord. Fog trumpet 5 secs. ev. 40 secs. Pilots .....	3a   98   14   1815			
Frederichsort 1. One br. fixed lt. 2. One br. or green lt.	54 23.5 10 11.7	1. On the ramparts ..... 2. Within point of reef; bright westward; green eastward .....	5a   56   9   1867 6a   38   8   1815			
Düsternbrook One red fixed light	.....	Iron tower, in front of marine depot .....	●   19   6   ....			
Kiel One green fixed light	54 19.2 10 8.7	On the pier .....	●   15   2   ....			
Sandpit, two red lights	.....	On E. shore of Fiord; in one S.W. 78 yds. apart .....	●   20   5   1872			

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>FEMERN BELT</b> One br. rev. lt., $\frac{1}{2}$ min.	54 29.6 11 14.5	Marien tower, 52 ft. high, on Ohlendorf-huk, N.E. point of Femern Island .....	b	94	12	1832
<b>FEMERN SUND</b> Three bright fixed lts.	54 26.3 11 1.2	1. On S.W. end of Femern Id., at Flinge Wood 2. On Strankamp Point 8 $\frac{1}{2}$ miles to S.E. & S. 3. Leading lights for Femern Sound.....	4a 6a ..	57 18 ..	13 8 ..	1871 18.1 1854
<b>Neustadt</b> One rev. br. lt., 2 min.	54 5.3 10 51.8	Square tower, 31 ft. high, on Pelzer Point, 2 miles S.E. by E. of entrance to Neustadt ..	5a	47	11	1842
<b>SWEDEN.</b>						
<b>Baltic, West Shore.</b>						
Trelleborg One bright, one green lt.	55 22.5 13 9.3	On the quay in harbour; in one, N.N.E. & E., they lead in .....	..	..	..	1863
Ystad Harbour One red, one bright lt.	55 25.5 13 50.1	High lt. bright; red lt. at entrance; in one, N.E. by N. Also a red lt. on W. pier-head .....	4a ..	61 17	10 ..	1847 1866
<b>SANDHAMMAREN</b> Two bright fixed lights	55 23. 14 11.5	Iron towers, red, 96 ft. high; in one, N.N.W., 750 ft. apart.....	2a 2a	104 104	16 ..	1862
<b>UTKLIPPOR ROCKS</b> One fix. & fl. br. lt. 1 $\frac{1}{2}$ m.	55 57.2 15 42.1	Red, open, iron structure, on stone tower, on fortress of S. Rock, S. Karlskrona. Fog-bell	●	110	16	1840
<b>HÅNÖ</b> Br. fix. lt., red flashes	56 0.5 14 51.	On summit of island, South of Carlshamn. Red flashes every minute .....	4c	218	14	1869
Carlshamn One fixed bright light	56 10. 14 52.3	Leading light for the harbour in Hånö Bight. Shown between S. & E. and S. & E. ....	..	..	8	1872
Carlskrona Harbour One br., 1 red leading lt.	..... 56 20.8 16 14.8	Bright light from dockyard; red light from lightvessel. In one, lead in. Gong .....	..	..	..	1870
Utgrunden Lightvessel Two bright fixed lights	56 20.8 16 14.8	At 4 cables S.W. of South Spit, in S. part of Kalmar Sound. Fog-bell .....	●	26	8	1866
<b>GRIMSKÄR</b> Fixed, flashing, and red light	56 39.2 16 22.4	Tower, 38 ft. high, chequered red and white, on the rock near Kalmar. Light shows as flashing, betw. N.N.E. & E. and N.E. & N., fix. betw. N.E. & N. and N.E. & N., flashing betw. N.E. & N. and N.E. & N., red betw. N.E. & N. and N.E. & N., fix. br. betw. N.E. & E. and S. To the southward betw. S. and S. by W. & W. it shows as a flashing lt., betw. S. by W. & W. and S.W. by S. as a fix. lt., and betw. S.W. by S. and S.W. & W. as a flashing lt. Gong in fog .....	4a	46	12	1865
<b>ÖLÄNDS. SOUTH POINT</b> One fixed bright light, and flashing light	56 11.8 16 24.5	White stone tower, 136 ft. high, on point. Lt. shows flashing over Ut Grund, betw. N. 16° W. and N. 90° W., and from N. 4° E. to the land. Pilot-station. Two guns in answer to signals in fog .....	2a	133	17	1785
	56 49.3 16 50.7	Iron tower on E. coast of Öland. Flash every 10 seconds.....	c	..	..	1845
Björnhabben Rock One fixed bright lt.	57 22. 17 6.5	White tower, 105 ft. high, on rock. Off N.W. point of island .....	3a	103	12	1843
Ispe Point One fix. red & br. lt.	56 44.7 16 30.8	Lt. shows br. betw. S.W. by W. & W.S.W. & W., red betw. W.S.W. & W. and N. by W. & W., and br. betw. N. by W. & W. and N.W. by N. Between S.W. by W. and W.S.W. & W. a flashing light intended .....	5a	25	9	1866
Borgholm One bright fixed lt.	56 52.6 16 38.1	On keeper's house.....	5a	36	10	1865
Demman Shoal One revolving light	57 3.6 16 40.8	Shows flash every 40 secs, obscured between E. and E.S.E. Gong in fog .....	●	43	10	1874
<b>Färö</b> One red or bright light	57 17. 16 38.	From roof of pilot's house, N.E. end of Färö. Lt. shows fix. red betw. N. 45° W. & N. 56° E., leading E. of Ronn Reef and other outlying shoals; red & white flashes betw. N. 56° E. & S. 67° E., leading $\frac{1}{2}$ mile N. of Jungfrun Id.; and fix. white over remainder of arc. Bright lt. vis. 8 or 9 miles, red lt. 5 or 6 miles .....	● ..	47 ..	8 5	1874
<b>GOTTLAND.</b>						
<b>HOBORG</b> One rev. br. lt. 2 min.	56 55.3 18 11.1	White tower, 71 ft. high, on S. point of island .....	..	190	16	1846
<b>Faludden</b> One fixed red light	56 59.8 18 25.7	Red lt.-ho., 87 ft. high, on S.E. coast of Gotland. Two guns in answer to signals in fog. Gong	3a	35	8	1867
<b>Märketsholmen</b> One flash. lt., 10 secs.	57 13.3 18 43.2	Round, red, iron tower, with white belt, on the S.E. coast of Gotland .....	..	70	12	1878

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>GOTTLAND—(continued).</b>						
Wisby One red fixed light	57 38.2 18 18.7	On S. end of breakwater. In winter only for mail boats.....	..   ..   ..	1867		
ÖSTERGARN ISLAND One fixed bright lt.	57 26.4 18 59.8	Tower, 66 ft. high. Fog-bell.....	3a   101   14	1817 1849		
Westergarn Two fixed lights	57 27.3 18 9.8	For mail steamers; at entrance of harbour. In line, lead in .....	●   ..   10 ..   ..   12	1860 ....		
Utholmen One fixed, flashing, & red light	57 25.9 18 7.3	On a house, on W. part. of Id. Fix. br. lt. to southward and westward, flash. br. lt. betw. N. & W. and land, and red fix. lt. betw. S.E. & E. & S. ....	●   32   9 1878	1860 1878		
Färö One rev. br. lt., 2 m.	57 57.4 19 23.3	White tower, 90 ft. high, on Holm Point, East end of island. Gong .....	●   100   14	1847		
HÄRADSKÄR ISLET One br. fix. & flash. lt.	58 8.8 16 59.7	Red iron tower, 96 ft. high, on S.W. end of inlet. Fixed light, with flash every 1/4 min.	10   117   17	1864		
GÖTSKA SANDÖ Two fixed bright lights	58 23.2 19 12.9	Red and white towers, 78 ft. high, on N. part of island. In one, S. 5° E., 260 yds. apart, lead 1 mile W. of Kopparsternarne Shoal ...	3a   136   16 3a   136   ..	1859 ....		
Femöre-huvud One bright fixed light	58 38.9 17 7.	On red house, with white vertical band. Gong .....	●   ..   ..	1867		
Ledskär One bright fixed light	58 42.2 17 13.8	On red house, with white vertical band.....	●   ..   ..	1867		
Bokö Sund One bright fixed light	58 51.2 17 36.5	On red house, on Oxnö.....	●   ..   ..	1867		
LANDSORT One br. lt., red flash 1 m. Lower green light	58 44.5 17 52.4	Round tower, 85 ft. high, on S. pt. of Id. Lower green lt. shows in fairway channel. Two guns in answer to Fog-signals. Gong .....	2a   146   18 1870	1860 1870		
Mäsknuf One bright fixed light	58 51.4 18 1.4	On rock, in Dalarö Channel .....	5a   29   9	1868		
Sandö One br., 1 red fixed lts.	59 17.5 18 56.	On island, at Sandhamn entrance to Stockholm. Pilot station. Guide between outer shoals .....	..   ..   ..	....		
KORSÖ One br. lt., with flash	59 17.2 18 57.2	Gray tower, 85 ft. high, on islet hill. Light flashes every 2 1/2 minutes .....	4c   151   17	1768		
GRÖNSKÄR One bright fixed light	59 16.8 19 1.9	Granite tower, 76 ft. high, on the rock; while free from ice .....	3d   111   15	1786		
Kanholmen One fixed light	59 22.2 18 45.	On red house on Stockholm Rocks. Aug. 1 to May 15.....	●   ..   ..	1867		
SVENSKA HOGAR One red and br. rev. lt.	59 26.7 19 30.5	Lt. flashing every 1/2 min. Red iron tower, 60 ft. high, on summit of island. Bell & Gun .....	2b   101   14	1874		
Svenska-Björn Lt.-Ves. Two bright fixed lights	59 35.5 19 46.6	Off Stockholm Skaren, S. of the Sea of Aland. Fog-bell .....	●   89   10	1868		
SÖDERARM One rev. br. lt., 2 min.	59 45.4 19 28.	White tower, 66 ft. high; two red belts; on Tollsör, near old beacon. Pilot station .....	●   99   14	1839		
NÄSKUBBEN ROCK One fixed red light	59 52.7 19 5.5	Off Björkö. Shown from N. & E. by W. to S. by W. ....	●   21   9	1850 1869		
Simpnäs Klinbh One bright fixed light	59 53.7 19 5.1	Off N.E. point of Björko. Gong .....	●   45   8	1869		
Grissel Hamn	.....	Light occasionally on beach .....	..   ..   ..	....		

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SVARTKLUBB ROCK</b> One rev. br. lt., $\frac{1}{2}$ min.	60 10.3 18 50.	In the South Quarken. White tower, 54 ft. high, with two red belts, on the rock. Bell	●	68   13	1819	
<b>UNDERSTEN ROCK</b> One fixed bright light	60 16.6 18 55.6	In the South Quarken. Tower, with two red bands, 35 ft. high, on the rock. Lt. shown betw. W. S.W. and N.N.W. & W. A black double cone is shown when Finngrund lves., and a red globe when Grundkalle lves., is not in her station .....	●	78   12	1848	
<b>DJUNGSTEN</b> Ore fixed bright light	60 22.2 18 24.5	White tower, 52 ft. high, on W. pt. of Gräsö Island, in Ore Grund Bay. Shows a red sector in a N. and N.W. direction .....	●	65   12	1830	
<b>Oregrund Bay Lt.-ves.</b> One bright light	60 27.5 18 17.	In North part of Oregrund Bay, Gulf of Bothnia. Gong and Bell .....	●	22   8	1878	
<b>ÖRSKÄR ISLAND</b> One rev. br. lt., 2 min.	60 31.5 18 22.2	Tower, 110 ft. high, white, with two red bands	●	118   16	1739	
<b>Grundkalle Shoal Lt.-Ves.</b> Two fixed bright lights	60 30. 18 55.	North end of shoal. Two red balls. Bell in fogs. When not in her station, a red globe is shown at Understen lighthouse .....	●	40   10	1864	
<b>GULF OF BOTHNIA.</b>						
<b>Eggegrund</b> One bright fixed light	60 43.8 17 33.1	On roof of a house, on West end of islet. Gong	●	62   9	1838	
<b>Skutkars Harbour</b> One red fixed light	60 39.3 17 24.6	Small wooden tower on main island .....	..   ..	4	1871	
<b>Biörn Rock</b> Two fixed bright lights	60 37.7 17 59.5	One on tower, the other on keeper's-house. In one, N.W., 117 ft. apart. Two Signal-guns in answer to Fog-signals .....	●	42   11	1859	
<b>Bönan</b> One fixed bright light	60 44.4 17 19.6	Near Custom-house .....	●	62   6	1840	
<b>Ostra Finngrund Lt.-Ves.</b> One fixed bright light	61 1.5 18 31.	Two miles N.E. of North shoal. Two masts, one ball. Fog-bell. When not in her station, a black double cone is shown at Understen lighthouse .....	●	37   10	1859	
<b>STOR JUNGFRUN</b> One fixed bright light	61 10.1 17 21.	Tower, 56 ft. high. Two red belts. On East side of island. Pilots .....	3a	86   14	1838	
<b>Söderhamn</b> Two fixed red lights	.....	F.S.E. and W. N.W., 292 yds. apart. Outer lt. elevated 20 feet on S. pt. of Skuggskär. Leading lts. for Söderhamn Harbour. Vis. only through small arc, and shown from Aug. 1 until port is closed by ice .....	●	20   ..	1876	
<b>Ägö</b> One br. rev. lt., 20 secs.	61 32.8 17 28.7	On East point of island, off Hudiksvall.	●	95   12	1860	
<b>BRÄMÖ</b> One fixed bright light	62 13.1 17 45.5	Yellow tower, 50 ft. high, on N.E. point of island .....	2a	101   17	1859	
<b>Sundsvall Harbour</b> One fix. and flashing lt. Temporary white lt.-house building	62 20.2 17 28.5	On Däghall Rock. Flash betw. S.E. by S. & S.E. & E., fix. betw. S.E. & E. and S.E. by E. & E., flash betw. S.E. by E. & E. and E. by S. & S., and fix. in Sundsvall Channel ...	..   ..   ..		1878	
<b>Lungö</b> One fixed and flash. lt.	62 38.3 18 6.	Yellow tower, 31 feet high, on East point of island. Flash every 3 minutes .....	4a	78   12	1861	
<b>Skags Harbour</b> One br. rev. lt., 1 min.	63 11.8 19 2.7	Tower, chequered red and white, on Gräklubb Island. Lt. not visible to eastward of N....	..	71   12	1871	
<b>Sydost Brotten Grund</b> Lightvessel	63 19. 20 9.	2½ miles from S. edge. Two masts. Fog-bell	●	10   ..	1862	
One bright fixed light						
<b>SKALSKÄR</b> One rev. br. and red lt.	60 24.7 19 34.	Bright and red flash alternately every 30 secs.	2b   ..   ..		1868	
<b>HOLMO GADD</b> One fixed bright light	63 35.8 20 46.6	Tower, 68 ft. high, on Holmö, S. Gadd Rocks. Strong light to N.N.W. & W. Two guns in answer to Fog-signals .....	●	70   12	1828	
<b>Bredskär Island</b> Two fixed bright lights	63 39.6 20 20.3	Leading lts., to mark Bredskär Sound, Umeå Channel. Shown betw. Aug. 10 and Nov. 10	..   ..	3	1877	
<b>UMEÅ</b> One rev. br. lt., 2 min.	63 48.6 21 1.2	In the North Quarken; on Fjaderägg Great Rock .....	●	101   16	1861	

Name and Character of Light.	Lat. N. Long. E. °      °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. in Miles.	Visible in Miles.	Year established.
Ratan Leading lights	64 0. 20 55.	Inner light red, elevated 30 ft.; outer white, elevated 18 ft. In line, lead clear of shoal at South entrance. Fog-bell .....	..   ..   5   1874			
<b>BJURO KLUBB</b> One fixed bright light	64 29.3 21 35.4	Stone tower, 25 ft. high, on the head. Gong	2a   171   18   1859			
Haparanda One fixed bright light	65 31.7 23 36.5	Red tower, 60 ft. high, on Malören Rock. Pilot station.....	●   78   10   1851			
<b>Bödkallen Rock</b> One br. rev. lt., 1 min.	65 19.3 22 23.2	Open iron tower, painted red, 72 ft. high, on the rock.....	●   84   12   1873			
Tornä	65 48.5 24 12.	Light proposed .....	..   ..   ..   ....			
<b>Uleaborg</b> One br. fix. & flash. lt.	65 2.5 24 34.	White round tower, on Maria Point, W. end of Karlö. Shown from S.S.W. & W. by the W. to S.E. & E. Bright flash every 40 secs. Signal station for pilots .....	4c   110   15   1872			
<b>ULKO KALLA</b> One fixed bright light	64 20. 23 29.	Dark red round tower, Gulf of Bothnia .....	4a   58   13   1872			
Vargö Gaddar	.....	Light proposed .....	..   ..   ..   ....			
Quarken Lightvessel One fixed red light	63 26.7 20 45.8	On the N.W. end of bank, in North Quarken. Fog-bell	●   20   7   1868			
Quarken One rev. br. lt., 1 min.	63 14.1 20 37.7	Brick tower, 62 ft. high, on Norr-Skaren, W. inlet, S. entrance of N. Quarken Pilots. Bell	●   103   12   1848			
Gaddarne	62 58. 20 42.	.....	..   ..   ..   ....			
Kaskö One fix. & flashing red light, $\frac{1}{2}$ min.	62 20. 21 11.	White tower, 86 ft. high, surrounded by red wall, on Skal Grund Island.....	3c   103   16   1875			
Björneborg Flashing lt. every min.	61 28.6 21 22.5	On North side of Skäb Skär Island.....	4b   117   16   1873			
<b>NYSTAD</b> One fixed bright light	60 43.2 21 1.	Tower, 120 ft. high, on Enskär Island, 9 miles N.W. of Loperton. Pilot Station. Shown westward from N.W. by W. to S.W. by W. Fog-bell	●   152   14   1833			
<b>SKÄLSKÄR, SOUTH</b> One revolving lt., $\frac{1}{4}$ min.	60 24.8 19 34.	Stone tower, 120 ft. high, on S. rock, entrance to N. Quarken. Flashes bright and red alternately .....	2b   149   18   1868			
Ekerö One bright fixed light	60 13.3 19 31.3	At the head of inlet .....	..   20   5   1861			
<b>LÄGSKÄR</b> One fixed bright light	59 50.8 19 55.1	Red tower, 89 ft. high, on N. point. Shown northward, from N.E. & E. to S.S.E. Bell...	●   101   14   1859			
Helman Island One bright fixed light	60 12. 19 17.	On one of the Åland Islands. Aug. 1 to May 1. Shown from S.E. by E. & E. to E.S.E., and from S.W. to N.W. by W. & W. ....	●   23   8   1868			
<b>OUTÖ, or UTÖ</b> One fixed bright light	59 46.5 21 22.2	Tower, 93 ft. high, red and white squares, on middle of island. Pilot station .....	●   130   13   1866			
<b>HANGÖ</b> One fix. lt., with flash, 2 min.	59 46. 22 58.1	Tower, 86 ft. high, on S.E. point of Russari Island, 3 miles S. & W. of head. May 18 to July 13. Pilot Fox-bell .....	3b   112   15   1863			
<b>Hangö Head Road</b> 1. One br. or red fix. lt. 2. One green, one br. lt.	59 48.2 22 57.7	1. On N. end of Gustafsvärd Island. Red to entrance from S.S.E. & E. to N.N.W. & W., bright to anchorage .....	a   40   10   1869			
		2. On mole constructing. Green lt. on mole-head, and bright lt. at North end of mole ...				
<b>RENSKÄR</b> One fixed bright light	59 56.2 24 24.7	Granite tower, 112 ft. high, 1 $\frac{1}{2}$ mile S. & W. of Porkala Point. Shown from S.W. by W. to E. by S.....	●   172   15   1800			

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year Established
<b>SÖDER SKÄR</b> One fixed and flash. Lt.	60 6.7 25 25.9	Brick tower, 99 ft. high. Bright flash every $\frac{1}{3}$ min. Shown from N.W. $\frac{1}{2}$ N. to N.E. $\frac{1}{2}$ E. Pilot station.....	3a   124   16   1862			
<b>Kalbaden-grund Lt.-Ves.</b> One fixed bright light	59 58.8 25 37.5	In 18 fathoms, on S. side of shoal. Ball at mast-head. Fog-horn, 3 secs. ev. 10 min. ....	●   40   10   1858			
<b>STYRS UDD</b> One fixed bright light	60 10.5 29 2.	North side of entrance to St. Petersburg Bay	3a   117   12   1873			
<b>Sestroretsk</b> Harbour lights	60 7.0 29 56.5	A red lt. on E. side, and blue lt. on W. side of entr. to harb. A br. lt. at each angle of the outer or W. side of harb., and on wharf.....	..   ..   ..   ....			
<b>Neva Lightvessel</b> One fixed bright light	59 55.4 30 8.9	Entrance of Korabeyn ship channel to St. Petersburg. From August till ices.....	●   57   6   1858			
<b>Telaguin Lightvessel</b> One fixed bright light	59 58.3 30 9.6	Entrance of North channel to St. Petersburg. From August till closed. Fog-bell.....	..   16   5   ....			
<b>Peterhof</b> Two fixed bright lights	59 53.4 29 54.9	Two pillars on end of pier. From August till close of navigation. Fog-bell.....	..   26   6   1857 ..   19   5   ....			
<b>Oranienbaum</b> One fixed bright light	59 55.7 29 46.6	On staff, on West pier. August till close. Fog-bell.....	..   45   6   ....			
<b>Frederikstadt</b> One fixed br. or blue lt.	59 58.2 29 47.2	Iron tower, 82 ft. high, on angle of Kronstadt Harbour. The lt. is blue from S.W. by W. $\frac{1}{2}$ W. to N.W., by S. and E.; the rest bright. Fog-bell .....	6a   38   6   ....			
<b>KRONSTADT</b>						
Merchant's Gate	59 58.9	One on each mole-head .....	4a	20	5	....
Two fix. bright lts.	29 45.4	..	..	21	..	1828
Friderikstadt	.....	From angle of S. bastion of Kronstadt Harb. Lt. blue from S.W. by W. $\frac{1}{2}$ W. to N.N.W. $\frac{1}{2}$ W., & white over remainder of circle. Fog-bell .....	..	39	8	1865
One bright or blue lt.	.....	Upper bright, lower red light, on S. side of St. Nicholas Battery, Kronslot Isle.....	4a	55	10	1863
One fix. red, and one bright light	.....	Horizontal; on bridge of military port .....	6a	25	8	....
Two fixed bright lts.	.....	On boat piers. Fog-bell on each pier .....	●	15	4	1866
Two fixed bright lts.	.....	..	..	..	..	....
<b>TOLBOUKIN</b>	60 2.6	White tower, 85 ft. high, on an islet, West of Kronstadt Island .....	3b   95   11   1832			
One rev. br. lt., 1 min.	29 32.7					
<b>London Shoals Lt.-Ves.</b>	60 0.1	Set triangularly. May 28 to July 13. Fog-bell	●   23   7   1858			
Three bright fixed lights	29 31.4	..	..	17	6	....
<b>Narva</b>	59 28.1	White tower, 67 ft. high, at South point of entrance to river. May 28 to July 13. Pilot and Semaphore Staton. Fog-bell	2a   63   12   1808			
One fixed bright light	28 3.5					
<b>SESKÄR</b>	60 2.1	Iron tower, 89 ft. high, on N.W. point of island. Fog-bell ev. $\frac{1}{2}$ hour .....	2d   97   14   1807			
One br. rev. lt., $\frac{1}{2}$ min.	28 23.					1858
<b>NERVA ISLAND</b>	60 14.7	White iron tower, 92 ft. high; entrance to Viborg Bay. Fog-bell.....	2a   118   16   1867			
One fixed bright light	27 58.6					
<b>SOMMARS</b>	60 12.5	On West hill of island. May 28 to July 13. Fog-bell .....	3b   85   10   1808			
One rev. br. lt., 1 min.	27 39.8					
<b>HOGLAND, N. POINT</b>	60 5.7	Two lts. on N. point. In one, S. by W. $\frac{1}{2}$ W., 1,250 yds. apart. High light hidden between S. by E. and S.E. $\frac{1}{2}$ S. Low lt. hidden from S.W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S. Fog-bell. Pilot-station .....	1a   388   23   1861			
Two fixed bright lts.	26 58.4					
South point of island	.....	On South point. Lifeboat station. Fog-bell	4a   29   7   ....			
One fixed red light	.....					
<b>Bödskär</b>	59 58.1	Black building, 52 ft. high, on island. Fog-bell. May 28 to July 13 .....	●   74   9   1813			
One rev. br. lt., 1 min.	26 41.1					

Name and Character of Light.	Lat. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Stenskär	59 49.2 26 23.1	Bright fixed light .....	3a	...	...	....
EKKHOLM	59 41.1 25 49.	Red stone tower, 76 ft. high, on N. point of island. May 28 to July 13 .....	2b	105	14	1851
KOKSKÄR	59 41.7 25 1.5	Dark tower, 92 ft. high, on the rock. May 28 to July 13. Fog-bell .....	2a	105	15	1858
REVEL, or Katerindal.						
Naval Port	.....	Bright lt. at E. Pass, end of mole; red lt. at S. Pass; bright lt. at W. Pass, end of mole; all on the wall .....	●	...	3	1859
Two red lts. to S., and two br. lts. to N.			●	...	3	....
●	...		●	...	3	....
●	...		●	...	3	....
Mount Lagsberg	59 26.3	One near marine barracks; the other behind Katerindal. In one, S. by E., 1,167 yds. apart, lead to Revel Road. N. lt. only shows from N. & W. to N. by W. & W. in fairway. S. lt. shows from N. 15° W. to N. 49° W. over the bay. May 28 to July 13 .....	3a	161	15	1806
Two fixed bright lts.	24 49.2		●	258	19	1835
Revelstein Lightvessel	59 43.3	In 80 fms., on N. side. May 28 to Nov. 13. Yellow flag. Fog Whistle. Keep to northward .....	●	32	6	1853
Two fixed bright lights	24 44.		..	40	..	....
MARGEN	59 36.4	Gray tower, 124 feet high, on N. part of island. Shown from S.W. by W. to E. by S. May 28 to July 13 .....	●	126	13	1828
One rev. br. lt., 1 min.	24 31.9					
SOUROP	59 27.9	White tower, 61 ft. high, on N. cliff of cape. Lt. shows from E.S.E. to W. by S. & S. N. light-tower, 35 ft. high, at 1/4 mile E. of old tower. Light shows over channel from W. by S. to W. by S. & S. In one, E. by N. & N., they lead in .....	●	135	13	1788
Two fixed bright lights	24 24.1		4a	28	10	1859
PAKER ORT	59 23.3	Stone tower, 66 ft. high, on cape. Shown from W. by S. to N. by E. May 28 to July 13. Fog-bell .....	●	147	14	1808
One fixed bright light	24 3.4					
POR T BALTIC	.....	Green lt. on W. side of harbour, red lt. on E. side of harbour, 72 ft. apart. Shown betw. Oct. 1 and April 1 .....	..	17	2 1/2	1877
One fixed green light			..	17	2 1/2	
One fixed red light						
ODENSHOLM	59 18.3	Stone tower on N.W. pt. of island, painted in black and white horizontal bands. Lt. shows 6 sec. & 4 sec. flashes altern., with eclipses of 3 secs. Masked over Stapelboten Grund S. of S.W. & W. .....	2b	115	16	1876
One flashing bright lt.	23 23.					
Wormsö	59 1.8	White iron tower, 79 ft. high, on W. end of Id. Lt. shows white, from N.E. & E. to N.N.W. & W.; red, to mark the entr. of Wormsö Sound, betw. N.N.W. & W. & N.N.W. & N.; & white from N.W. & N. to S.E. by E. .....	3a	67	14	1864
One fixed light	23 8.3					
Werder Island	58 33.9	Brown iron tower, 93 ft. high, on W. part of island in Möönsund. Lt. bright in channel, from S. & E. to S.S.W. & W.; thence red over shoals to W. to N.W. by N. .....	3a	94	11	1866
One fixed light	23 31.3					
TAKHONA POINT	59 5.4	Iron tower, painted white. Lt. shown betw. E. & S. & W. & N., being masked over Nekman Grund on the W., and Anker Grund on the E. .....	1a	140	18	1876
One bright fixed light	22 36.					
DAGER ORT	58 55.	White tower, 110 ft. high, on a hill, 5 miles inland of W. point of Dago Island. May 28 to July 13. .....	1d	328	21	1860
One fix. & flash. lt. 1 m.	22 15.2					
North Ristna Point	58 56.3	White iron lighthouse, 98 ft. high, on W. extreme of Dagerort. Fog-bell .....	4a	118	17	1875
One fixed red light	22 4.2					

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.	
<b>GULF OF RIGA.</b>							
Kinö	58 5.8 One br. rev. lt. $\frac{1}{2}$ min.	White iron tower, 93 ft. high, on S. part of island.....	3b	93	11	1865	
	23 59.6						
Pernau	58 23.2 Two fixed lights	Two lanterns, near S. entrance. Sept. 1 till ice .....	..	..	..	1856	
	24 30.8						
Riga	1. Upper br. rev. lt. $\frac{1}{2}$ min. 2. Lower red fixed lt. 3. One fixed green lt.	1. and 2. In same iron tower, 99 ft. high, on Fort Karmet Dyke, W. side Dvina entrance. Red lt. from W. by N. & N. to N. by E., over best anchorage in river entrance. Pilot station .....	2b 4a 6a	103 21 25	16 9 8	1818 1863 1863	
	57 3.5 24 1.3						
Messargatsem Point	57 21.7 One rev. red & br. lt.	Iron tower painted white. Lt. bright and red alternately for $\frac{1}{2}$ minute .....	4b	69	13	1875	
	23 8.3						
RUNÖ	57 48.1 One fixed bright light	Yellow building, 102 ft. high, on Hochberg, S.E. of island. May 28 to July 18 .....	●	200	16	1860	
	23 15.5						
DOMES NESS	57 48.2 One fixed bright light	Lts. from stone towers on the Ness S.S.W. & W. 106 yds. apart discontinued, and temporary lt. shown on extreme of reef. Semaphore telegraph-station. Lifeboat .....	..	..	..	....	
	23 39.3						
FILSAND ISLAND	58 23. One fixed bright light	Stone tower, 115 ft. high, on W. point. Shown westward from N. & W. to S. & E. Lifeboat station .....	1a	136	13	1860	
	21 49.9						
Cape Karal <i>Proposed</i>	58 18.1 21 51.7	Red light proposed .....	1a	..	..	....	
SWALFER ORT	57 54.6 One rev. br. lt. $\frac{1}{2}$ min.	White tower, 114 ft. high, on S. point of Ösel Island Lifeboat .....	●	114	12	1838	
	22 4.2					1860	
Skilitter <i>Proposed</i>	.....	Light proposed .....	4a	..	..	....	
LYSER ORT	57 34.1 One fixed bright light	White tower, 109 ft., 1,100 yds. in-shore of cape. Lt. is red (or black ball), with compact ice. Shown northward from E. by N. to S.S.W. & W. ....	2a	127	13	1845	
	21 43.9					1863	
Windau	57 23.8 Two fixed lights	One green, one red light, on jetties .....	..	..	2	1870	
	21 32.4						
LIBAU	56 31. 1. One br. fix. & flash. lt. 2. One red fixed light	1. Red iron tower, 95 ft. high, at entrance of harbour. Flash of 5 secs. ev. min. Reported as flash of 10 secs. once in 2 minutes .....	3c	103	15	1868	
	20 59.7	2. On S. jetty. Shown from W.S.W. to N.N.E.	4a	26	8	1869	
<b>PRUSSIA (NORTH GERMANY).</b>							
MEMEL	55 43.7 One fixed bright light	Round tower, 70 feet high, on N.E. side of entrance. Shown from N.W. to S.W. Lifeboat station. Aug. 1 to May 15 .....	..	96	20	1818	
	21 6.2						
NIDDEN	55 18.3 One br. flashing lt. 10 a.	Tower, 75 feet high, on Urbe Calis Hill, near village, on Kurisch Nehrung .....	1b	223	22	1874	
	21 6.						
BRÜSTER ORT	54 57.7 One fix. lt., flash 4 min.	Red tower, 75 feet high, on the cape. Shown all round, except between S.W. and S.S.E. ....	2c	143	20	1841	
	19 59.2						
Pillau	54 38.3 One fixed bright light	Round tower, 88 ft. high, S.E. of town. Aug. 1st to May 15th .....	..	92	20	1841	
	19 54.2						
Frische Haff Konigsberg	54 41.3 20 22.5	Two fixed lts. Shown from red beacons on N. side of channel; in one, show direction of channel .....	..	18	10	1868	
Frauenberg	54 21.5 19 40.8	Red harbour light .....	..	..	..	....	
DANZIG	52 24.3 One br., one red fix. lt.	Bright lt. on Neufahrwasser Tower, 63 ft. high. Red lt. on end of E. mole. In one, N. and S., 1,647 yds. apart. Steam Fog-trumpet .....	..	78	14	1841	
	18 40.2				43	6	1833
OXHOFT POINT	54 33. One flashing light	Flash every 3 secs. Lt.-ho. N.E. & E., 580 yds. from Oxhoft Church. Lt. obscured on some bearings by Hela Peninsula .....	..	162	13	1877	
	18 34.						

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established
<b>HELA</b> One rev. br. lt., $\frac{1}{2}$ min.	54 36.1 18 49.2	Round tower, 109 ft. high, at 4 cables N.E. $\frac{1}{2}$ N. from point. Shown east and from N. by W. $\frac{1}{2}$ W. to S.S.E.	..	120	16	1840
<b>Heisternest</b> One fix. & flash. br. lt.	54 39. 18 47.3	On the Hela Peninsula, Gulf of Danzig. Lt. shows br. flash of 10 secs., preceded and followed by eclipse of 10 secs. once in ev. 2 min. Vis. betw. S. by W. $\frac{1}{2}$ W. and W. by N. $\frac{1}{2}$ N.	..	120	8	1872 1877
<b>RIXHOFT</b> Two fixed bright lights	54 50. 18 20.7	New tower (1875) W.N.W., 208 yds. from old tower 70 ft. high. Lts. vis. seaward from W.N.W. to S.E. Fog-trumpet, 5 secs. ev. min.	1a	226	22	1866
<b>SCHOLPIN</b> One fixed bright light	54 43.2 17 14.8	Light-tower, 66 ft. high, on hill, $\frac{1}{2}$ mile from shore	1a	231	21	1875
<b>Stolpmunde</b> One red fixed light	.....	On the Pilot's watch-house. Bearing S.S.E. leads to entrance.	..	248	22	1875
<b>JERSHOFT</b> One rev. br. lt., 2 min.	54 32.7 16 33.	Stone building, red, 98 feet high, near village. Shown northward from E.N.E. to W.S.W.	..	160	18	1838
<b>FUNKENHAGEN</b> One fixed bright light	54 14.7 15 52.1	Lt.-ho., 147 feet high, close to shore, and 11 miles eastward of Colberg light	2a	164	19	1877
<b>Colberghunde</b> One fixed bright light	54 11.2 15 34.	On extremity of East mole	..	25	8	1866
<b>GROSS HORST</b> One rev. lt., 20 secs.	54 5.8 15 4.9	Brick tower, striped red and black, 181 ft. high	1b	200	20	1866
<b>SWINEMUNDE</b> 1. One fixed bright lt. 2. One fixed red light	53 55. 14 17.6	1. Port of Stettin. Yellow brick tower, 200 ft. high, on E. side of harbour; br. lt. shown northwards from E. by N. to N.W. 2. From red tower on E. mole-head, $\frac{1}{4}$ mile N. of yellow tower. Fog-bell	1a	211	21	1855
<b>Grosse Haff</b>	.....	Lt.-vessels are placed at the Krixhaken Bank, in Schwantewitzhaken Bay, and near Wollig Bank	..	42	10	1857
<b>Uckermünde</b>	..	Fixed light on West mole	..	26	..	....
<b>GREIFSWALDER ÖIE</b> One revolving lt., 3 m.	54 14.7 13 55.4	Red tower, 120 ft. high, on N.E. part of island. Flashes red and white alternately	..	154	17	1840
<b>Palmerort Lightvessel</b> One fixed bright light	54 12.4 13 25.	In the Baggerrinne Channel; yacht-rigged. Pass to northward. Fog-bell	..	36	10	1868
<b>ARKONA</b> One fixed bright light	54 41. 13 26.2	Red tower, 62 ft. high, on Wittow Peninsula. Shown northward from S.W. by W. $\frac{1}{2}$ W. to S.S.E. $\frac{1}{2}$ E.; thence red to westward in Tromper Bay. Fog-trumpet near lt.-ho., blast of 5 or 6 secs. once every minute	..	200	22	1828 1851
<b>DARS POINT</b> One rev. br. lt., 1 min. Lower fixed bright lt.	54 28.9 12 31.	In one tower, red, 100 ft. high. Shown from S.W. by S. to E. $\frac{1}{2}$ N. Lower light shown only in channel, between Darsor Ort and Giedser Odde	2b	108	16	1848
<b>Warnemünde</b> 1. One fixed bright lt. 2. Two green, 2 red lts.	54 10.5 12 5.7	1. On W. side of entr. Shown from W.N.W. to N.E. $\frac{1}{2}$ E. Aug. 1 to April 30. (Tide signals) 2. Two green lts. are shown, one on each pier-head, at entr. of harbour, and 2 red lts. in one lead in	..	41	12	....
<b>BUCH POINT</b> One flash. lt., red or br.	54 7.9 11 41.7	Lt.-ho., 68 ft. high, red and white bands, 13 cables S. of Buch Point. Lt. shows br. flash of 6 secs. ev. 15 secs., except betw. W. $\frac{1}{2}$ S. & S.W. $\frac{1}{2}$ W., where it is flash. red over shoals	2c	312	17	1878
<b>Timmendorf</b> One bright fixed light	54 0. 11 23.	White tower at Pilot station, on N.W. end of Poel Island, Wismar Bay	5a	60	12	1872
<b>Travemünde</b> 1. One fix. br. 1 red lt. 2. Two red lights 3. Two green lights	53 57.6 10 52.9	1. Round tower, 113 ft. high, on N. point of river, 1 mile below Travemünde. Lights vertical. Upper lt. shown only in channel, between E. by N. and N.E. by E. Lower red lt. shown when pilots can go out 2. On S. mole and Prival Peninsula. In line, lead in mid-channel 3. One on jetty; the other between 2 houses	..	100	16	1827
<b>BORNHOLM</b> Christiansöör Krtholms	55 19.3 15 11.6	On round tower of fortress	..	68	6	....
One rev. br. lt., 20 s.	.....	Lighthouse building. Lifebeat station	5a	38	3	....
<b>Cape (Sweden) Building</b>	.....	On Steilebierg, near N. point of island	..	20	3	....
<b>HAMMAR POINT</b> One fixed bright lt.	55 17.1 14 46.8	1. Red lt. on shore, near church 2. Green lt. on W. pier-head. In one, E.N.E., they lead in	..	36	3	....
<b>Bönne</b> 1. One red fixed light 2. One green fixed lt.	55 5.7 14 42.0	..	..	22	3	....

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SKAGEN or SCAW</b> One fixed bright light	57 44.1 10 37.9	Red brick tower, 126 ft. high, $\frac{2}{3}$ of a mile from extreme. Lt. brightest from W. by S. to S. W. by S. Ice Signals shown. Signals shown on old lt., ho., if Kattegat lt.-vessels not there Off Skaw Point Reef, in 20 fms. To show red rev. lt. ev. 30 secs., and carry Fog-trumpet	1a   144   15	1561 1858		
<i>Lightvessel proposed</i>						
<b>HIRTSHALS</b> One fixed and flash lt.	57 35. 9 56.6	Red brick tower, 88 ft. high. Brighter flash every 4 min. Lifeboat and rocket-station. Fog-trumpet to be established	1c   187   21	1863		
<b>HANTSHOLM</b> One rev. br. lt., $\frac{1}{2}$ min.	57 6.8 8 36.2	Octagonal tower, 50 ft. high. on N.W. point of Jutland	2b   218   18	1843		
Thisted	.....	In Liim Fiord, red pier light	•   17   2   ...			
<b>Tybo-rön Channel Lt.-V.</b> One bright fixed light	56 42.7 8 15.5	Pilot and lightship at entrance to Liim Fiord.	•   30   10   1868			
<b>Møvbjerg Head</b> One fixed bright light	56 31. 8 7.	Red brick tower, 67 ft. high, 12 miles S. of Thybo Rön Channel	1a   202   20	1878		
<b>HORNS REEF LT.-VES.</b> One rev. br. lt. ev. $\frac{1}{2}$ m.	55 34.1 7 19.5	Lt.-ves. red, with white cross and red ball at fore-mast head, in 18 fms. water, at outer extr. of reefs. Fog-trumpet, 3 blasts once every 2 minutes	..   ..   ..   ..	1878		
<b>Graa Deep</b> Two bright fixed lights	55 30. 8 24.5	On the Seding Strand, as leading lts. for the Graa Deep. In one, bearing E. by N. $\frac{2}{3}$ N. lead in. Show over an arc of 180°	..   78   14   1873			
<b>Esbjerg Harbour</b>	.....	Two leading lts. on the jetties in one S.E. $\frac{1}{2}$ S. Red lt. on N. mole head	..   ..   ..   ..	1873		
<b>SYLT</b> Two fixed lights	55 3.1 8 24.3	Iron towers, 27 & 30 ft. E. lt. br., W. lt. reddish, on N. end of id. In one, S.E. by E. $\frac{1}{2}$ E., 2,910 yds. apart, lead over the bar	4a   63   10   1852			
<b>RODE KLIF</b> One fix. & fl. lt. ev. 4 m.	54 56.3 8 20.5	Round brick tower, 106 ft. high, near Brön Hill and village of Kamp. Light changes to red when over the bar	1c   205   20	1856		
<b>Munkmarsch</b> Two fixed bright lts.	54 55.2 8 21.8	South of landing-pier. In line lead through new channel	..   ..   ..   6	1876		
<b>Hoyer</b> Two fixed bright lts.	54 57.5 8 41.2	Leading lts. for channel from Hoyer Deep to Hoyer Watergate	..   ..   ..   6	1873		
Dagebüll Two bright fixed lights	54 43.7 8 41.3	Leading lights shown from landing-pier E.S.E. and W.N.W., 87 yds. apart. They appear red to northward	•   19   8   1845			
<b>Fohr Island</b> Two bright fixed lights	54 41.5 8 34.3	At Wyk, on S.E. side of island. Lantern lts. in one show entrance. Lifeboat station	..   15   ..   1842			
<b>AMRUM ISLAND</b> One revolving light	54 38. 8 21.5	Dark brown tower, 137 ft. high. Three flashes of 6 secs. every minute	1b   207   21	1875		
<b>Amrum Harbour</b> One fixed bright lt.	.....	From lamp-posts, E.S.E., 1,968 yds. from principal lt., in line with which it leads into the harbour	..   26   7   ...			
<b>EIDER LIGHTVESSEL</b> One bright fixed lt.	54 15.8 8 17.5	In 7 fms., westward of mouth of Eider River. Fog-trumpet, 5 secs. in ev. min. Signal-gun	6a   35   10   1805			
<b>Eider Pilot Lightvessel</b> One bright fixed lt.	54 15.5 8 34.6	Inner vessel, inside the bar, in 2 fathoms. Bell	•   34   10   1815			
Völlerwick	.....	Two fix. lts. to lead in channel to westward, and a similar pair of lts. to lead in channel to southward	..   ..   ..   1870			
Tönning	.....	Two fixed lights. (There are 11 lights in all, between the entrance and Tönning)	..   ..   ..   1861			
<b>RIVER ELBE.</b>						
<b>I. Outer Lightvessel</b> One rev. br. lt., 20 s.	54 0. 8 18.5	In 11 fathoms. Three masts; red flag at main. Fog-bell. Warning-gun and blue lights	6a   38   12   1816			
Loots Galliot Lt.-Ves. One fixed bright lt.	.....	Pilot-vessel, in 12 fathoms, $1\frac{1}{2}$ mile E.S.E. from outer vessel. Vane at main	..   ..   ..   ...			
<b>II. Middle Lt.-V. (Neptun)</b> Two fix. lts., vertical	53 59.2 8 25.2	In 12 fms., on N. side of Norder Gat, $3\frac{1}{2}$ miles from pilot-vessel. Three masts; blue and white flag at main	..   38   7   1828			
<b>III. Inner Lt.-Ves. (Jacob Hinrich)</b> One fixed bright lt.	53 57.2 8 32.2	In 9 fms., on S. side of Norder Gat, S.E. $\frac{1}{2}$ E. from No. II. Three masts; red flag, with white square, at main	..   36   7   1854			
<b>NEUWERK</b> Two fixed bright lts. Lower fixed light	53 55. 8 29.7	High light-tower, 185 feet high; lower part brick, upper part black. Low light-tower, black, 60 feet high. In one, S. by E. $\frac{1}{2}$ E., 685 yds. apart. Lower lt. from low lt.-ho., between buoys No. 8 and J	•   110   15   1814			
				•   50   12   1815		

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>RIVER ELBE—(continued).</b>						
IV. Elbe Lt.-V. (Ernst) One fixed bright lt.	53 55.7 8 40.3	Moored in 10 fms., in mid-channel, 2 miles northward of the Ball Beacon below Cuxhaven, for the winter months, S.E. by E. from No. III lightvessel .....	..   ..   ..   ..   ..			....
Kugel Baake One fixed bright lt.	53 53.5 8 41.7	Shows inside the beacon, from N.W. 3 N. to N.W., from black buoys J to L .....	4a   40   10   1853			
Cuxhaven One fixed & flash lt., flash every minute	53 52.5 8 43.	Brick tower, 66 ft. high, W. side of entrance. When it appears in entering, steer for it. It is a fixed lt. up the river. Red lt. on West pier; white in entrance .....	●   80   12   1802 6a   30   3   1861			
Altenbruch One bright fixed lt.	53 50.4 8 46.1	Illuminates the lower channel as far as Cuxhaven, and the upper channel as far as black buoy O .....	4a   44   8   1873			
Brunsbittel One fixed bright lt.	53 53.5 9 6.	The tower is 1/2 mile W. of harb. entrance. Lt. illuminates whole breadth of chan. upwards, and lower chan. as far as white buoy No. 17 .....	4a   43   8   1873			
Bösch One fixed bright lt.	53 53.7 9 15.	On E. side, when river is free from ice. Pilot station .....	6a   16   4   1820			
Stör One fixed red light	53 50. 9 24.1	On N. pier, at entrance of River Stör .....	●   20   5   1805			
Glückstadt One fixed light	53 47. 9 24.5	White iron tower on N. pier. Lt. red between S.W. by W. and W. by S. 1/2 S. .....	6a   16   6   1846 6a   16   6   1872			
Kraut Sand Light-Ves. One fixed bright lt.	53 43.4 9 27.8	N.W.-ward from Schwarz-tonnen Sand. Pass to North of her .....	●   40   5   1855			
Pagemsand One fixed bright lt.	53 42. 9 30.	On the N. side of the Sand the light shows between the white buoys Nos. 11 and 14 .....	6a   32   5   1873			
Esch One bright fixed lt.	.....	On the Schlickburg, and with Pagemsand lt., serves as leading mark .....	4a   51   8   1873			
Juel One fixed bright lt.	53 37. 9 33.	White tower on the N.W. spit of the Juel Sand .....	5a   31   6   1873			
Grauerort Lightvessel One fixed bright lt.	53 38. 9 31.	Near Butzifelth Sand. One black ball. Pass to northward. Gong in fogs .....	6a   40   5   1868			
Luhe One fixed bright lt.	53 34. 9 37.7	Turret on W. side of entrance to Luhe Creek. Pass to southward .....	6a   40   5   1868			
Schulau Lightvessel One fixed bright lt.	53 33.1 9 39.4	Near N.W. end of Hauskalb Sand. One black ball. Gong in fog. Pass to northward .....	●   40   5   1865			
Schulau One fixed bright lt.	53 34.1 9 40.	Near entrance. Visible when lightvessel is passed. A lower red light shown between white buoy No. 3 and black buoy No. 8 .....	6a   42   5   1855			
Finkenwärder One fixed red light	53 32.3 9 53.2	On a beacon. Illuminating up stream to Muhlenfuth Sand .....	..   ..   ..   1874			
Hamburg One fix. red & green lt.	.....	W. corner of Sandthor Quay: red over Oster Gatt, green towards Sandthor Harbour .....	..   ..   ..   ....			
<b>HELGOLAND</b> One fixed bright light One fixed red light	54 10.8 7 53.1	(British.) A circular white tower, 60 ft. high, on W. side of summit. Proposed to be altered to rev. lt. Sound-rocket ev. 10 min. in fog ..	..   221   20   1811			
<b>WESEER RIVER LT.-V.</b> Three bright fixed lts.	53 54. 7 49.	On separate masts, each at 89 ft. Each mast has a cap, at 74, 77, and 65 ft. A riding lt. at forestay. Fog Bell 5 times every 2 min. ....	6a   39   8   1874			
Inner Lightvessel One fixed bright lt.	53 49. 8 7.2	At entrance, in 9 fms. Two masts and ball at the fore. Gun and Bell in fogs. Pilots .....	..   36   5   1818			
<b>HOHE WEG FLAT</b> One fixed bright lt. Lower fix. br. or red lt.	53 42.8 8 14.9	In one brick tower, 100 ft. high. Upper lt. vis. all round, except over Hook Siel Flat (Jade River), betw. S.W. & W. & S. Lower lt. vis. from N. by W. & W. by E. by S.; it also shows red to the Dwagsatt .....	2a   112   15   1856 ..   44   7   1857			
Langlütjen Fort One fixed bright lt.	53 34.7 8 29.7	On landing-pier of fort, on East side of Langlütjen Sand .....	..   ..   ..   ....			
Brinkamahoff One fixed bright lt.	53 34.3 8 32.8	On landing-pier of fort, now building .....	..   ..   ..   ....			
Bremerhaven One bright fixed lt.	53 32.8 8 34.2	A handsome brick tower, 120 feet high, at entrance to Docks .....	●   110   10   ....			
Geestemünde	.....	One red, 1 green fix. lt.; in one lead up to entr. Lifeboat station. Time-bell .....	..   ..   ..   ....			

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height bove H. W.	Visible in Mile.	Year established
<b>JADE RIVER LT.-VES.</b> Two bright fixed lights	53 48.7 8 1.4	In 6 fathoms, near N. end of Minsener Sand. Three masts, two black balls. Fog-bell, ....	6a ..	50   34	10   ..	1871   ....
<b>Minsener Sand Lt.-V.</b> One fixed red light	53 45.4 8 5.1	Moored on E. side of channel, S. of Minsener Sand. In 9 fathoms. Red ball at main, ....	.. ..	51   59	..   11	....   1877
<b>Schillighorn</b> 1. One fix. bright lt. 2. One fixed red lt.	53 42.3 8 1.8	1. Dark lt.-ho., surmounted by ball, 76 ft. above ground. Upper lt. red, vis. only 9 miles off, betw. N.E. & E. and S.S.E. & E. .... 2. Lower lt. shows only a small sector of lt. betw. S.S.E. & E. and S.S.E. & E. in the fairway of channel to the southward. Signal-station	.. ..	69   69	12   11	1877   1877
<b>Hook-Siel</b> One bright fixed lt.	53 38. 8 2.1	On West side of entrance to Jade River .....	.. ..	..   ..	..   ..	....   ....
<b>Genius Bank Lt.-Ves.</b> One fixed bright lt.	53 34.7 8 10.7	Painted red; moored in 29 ft. water. One mast with ball at mast-head. Vessels should pass eastward of the lt.-vessel. Fog-bell rung for 2 minutes in every 5 minutes .....	.. ..	39   79	8   13	1878   1877
<b>Heppens Battery</b> One fixed bright lt.	53 31.5 8 9.5	Shown from wooden beacon between S.W. and N. & E. ....	.. ..	36   ..	..   ..	....   ....
<b>Wilhelmshavn</b> One green, one red lt.	53 31.3 8 9.5	Green lt. on N. mole-head, red lt. on S. mole-head .....	.. ..	..   ..	8   ..	....   ....
<b>Varelersiel</b> One flashing light One fixed bright lt.	53 24.8 8 11.1	From lt.-ho. of a dark colour, 96 ft. high, on Schlif mole. Upper lt. shows sector of double flash lt. to seaward, betw. N.W. & N. and N. by E. & E., and to eastward a sector of 1 flash lt. betw. N. by E. & E. and E.N.E. Lower lt. shows a 30° sector of lt. in the direction of channel N. by E. & E. ....	.. ..	89   79	13   13	1877   1877
<b>WANGEROOG</b> One rev. br. lt., 1 min.	53 47.4 7 53.9	East part of Id.; tower red, 100 feet high; a beacon to E. by N. of church .....	4b ..	108   ..	12   ..	1856   ....
<b>NORDERNEY</b> One br. flash. lt. 10 secs.	53 42.7 7 13.7	Lighthouse, 175 ft. high .....	1b ..	195   ..	20   ..	1874   ....
<b>BORKUM ISLAND</b> One fixed bright light	53 35.5 6 40.4	On red brick tower, 110 ft. high, on Westland, at entrance of River Ems. Shown over sea horizon n. Lifebase station .....	2a ..	142   ..	18   ..	1817   ....
<b>Termunterzyl</b> One bright fixed light	53 18.2 7 2.2	At entrance to port .....	.. ..	..   ..	..   ..	....   ....
<b>RIVER EMS</b>						
<b>BORKUM FLAT LT.-V.</b> Br. fix. lts. on fore & mizzen, red lt. at main	53 49.2 6 28.4	Moored in 13 fms. on Borkum Flat, N. by W., 18 miles from Borkum lt.-ho. In day, black ball on fore and mizzen, cage on mainmast. Fog-bell 1 min., at intervals of 2 minutes ...	.. ..	36   46	8   ..	1875   ....
<b>Knock</b> One fixed bright lt.	53 20.3 7 3.	On the dyke of the Knock, at entr. Shown from N. by W. to S.E. ....	6a ..	29   ..	8   ..	1859   ....
<b>Delfzyl</b> One fixed light	53 20. 6 56.1	(To Holland). At entrance to harbour .....	.. ..	..   ..	..   ..	....   ....
<b>NETHERLANDS.</b>						
<b>ZUIDER ZEE (PRINCIPAL LIGHTS).</b>						
<b>Harlingen</b> Two fix. leading lts.	53 10.6 5 24.7	Outer lt. on N. harbour mole. In one lead up, South of dam, through Pollen Channel .....	4a ..	56   ..	10   ..	1878   ....
<b>Stavoren</b> Two fixed bright lts.	52 53.2 5 21.7	N.W. side of harbour .....	.. ..	39   ..	10   ..	....   ....
<b>Urk Island</b> One rev. br. lt. ev. m.	52 39.7 5 35.8	Square white tower on S.W. point. Flash of 10 secs. and eclipse of 50 secs. Pilots .....	4b ..	82   ..	15   ..	....   ....
<b>Seckland Island</b> One br., one red lt.	52 37.2 5 46.7	On the N. and S. points of the island. Fog-bell Pilots .....	.. ..	47   34	8   10	1861   ....
<b>Hoek, near Amsterdam</b> One fixed bright lt.	52 22.3 5 1.1	At the angle of the river Y .....	4a ..	51   ..	10   ..	....   ....
<b>Marken Island</b> One fixed bright lt.	52 27.3 5 8.6	On S.E. point .....	.. ..	52   ..	10   ..	....   ....
<b>Geldersche Hoek</b> One fixed bright lt.	52 44.6 5 17.2	A stone tower on the dyke .....	.. ..	55   ..	10   ..	....   ....
<b>Wieringen</b> Two fixed bright lts.	52 53.2 4 56.3	On W. part of island, N. and S., 448 yds. apart .....	.. ..	39   16	6   4	....   ....

There are also small harbour lights for local service in the Zuider Zee at Workum, Hindeloopen, De Lemme, Blokzyl, Genemuiden, Kampen, Elburg, Harderwyk, Nykerk, Muiden, Edam, Hoorn, Enkhuizen, Medemblik, &c.

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SCHIERMONNIKOOG</b> Two fixed bright lights	53 28.8 6 9.8	Two red towers, on N. side of island. In one, S.E. by S., 1,102 yds. apart. N. lt. shown from N.E. by E. & E. to W. by N. & N. S. lt. shown to S. & E. Lts. not shown over S. flats. Lifeboat and pilot station .....	1a ..	147 139	15 ..	1854
<b>AMELAND</b> One fixed bright light	53 26.3 5 37.2	From iron stand on W. hill of Ameland, 550 yds. S. & E. from Hallum beacon. Lt. vis. between N.E. by E. and S.E. by S. ....	a ..	49	12	1876
<b>TERSCHELLING</b> 1. One fixed bright lt. 2. One fixed light 3. One fixed light	53 21.7 5 23.1	1. On the Brandaris tower, near West end. Shown all round. Lifeboat and Pilot-station 2. From wooden support, W. & N., 436 yds. from Brandaris lt.-ho. Lt. shows white from N. to S.W., red to S. betw. S.W. and S.S.E. 3. On N. side of chan., 600 yds. S. of Brandaris	1a ..	177 49	24 ..	1864 1877
<b>VLIELAND</b> One fixed light	53 17.8 5 3.8	Red tower, on highest sand-hill, E. end. Lt. red to West of N. & W.; bright to East. Lifeboat station .....	4a ..	151	12	1864
<b>TEXEL ISLAND</b> One rev. br. lt., 1 min.	53 11. 4 51.6	Red tower, 98 ft. high, on N.E. extreme of island.....	2b ..	164	16	1864
<b>Schulpe Gat</b> Two bright fixed lts.	.....	Leading lts. N. lt. on Schilbols Nol, S. lt. on Stuifdijk, 860 yds. to S.W. & W. Both shown between S.W. & S. and W. by S. & S. ....	4a ..	28 21	8	....
<b>Oude Schild</b> 1. One fixed red lt. 2. One fixed br. lt. 3. One fixed br. lt.	53 2.4 4 51.3	1. From standard on West mole ....., 2. On East mole ....., 3. At a dike on N. side of harbour, N.W. & W. 219 yds. from East mole light. Life-boat ..	.. ..	..	..	1878
<b>Nieuwe Diep</b> One fixed bright light One fixed red lt. to S.	52 58. 4 47.	On the Weirhoofd. In one, S.W. 51 yds. apart; only shown to Texel Road and Strüm.....	.. ..	29 35	8 8	1843 1843
<b>KYKDUIN</b> One fixed bright light	52 57.3 4 43.7	Iron lt.-ho., 182 ft. high, painted brown. In line with Dirkoo mastuin lt., 1,263 yds. S.W. of lt., leads up to outer buoy of Schulpe Gat	1a ..	187	20	1853
<b>Schulpe Gat</b> 1. One bright fixed lt. 2. One green or red lt.	52 56.8 4 43.2	1. On sand hills, 1,263 yds. S.W. of Kykduin. Shows between W.S.W. and S.S.W. In one with Kykduin lt., leads to outer buoys ....., 2. Near Falga, 1½ miles S.W. & W. from preceding lt. Green from S. by E. to W. by N.; red in other directions .....	4a ..	61	12	1864
<b>Zand-dyk</b> Two bright fixed lts.	.....	Both shown from W.N.W. to N.W. by W. In line, lead to outer buoy of the Gat .....	4a ..	36 64	6 10	1871
<b>EGMOND-AAN-ZEE</b> Two fixed red lights	52 37.2 4 37.6	Two stone towers on sand-hills, W. of village. In one, S.S.E. & E., 406 yds. apart. Lifeboat ..	3a ..	120 126	16 18	1834
<b>AMSTERDAM SEA CANAL</b> 1. Two fix. bright lts. 2. Two fixed red lts. 3. Two fixed blue lts.	52 27.7 4 35.5	1. Shown from towers, painted red and white, on S. shore of canal, 612 yds. apart. In line, S.E. by E. & E., lead in mid-channel through outer harbour to Nordzeehaven..... 2, 3. The red lts. in line indicate the N. side of the outer harbour, and lead 16 ft. clear of the outer mole. The blue lts. in line clear the S. side of the harbour in the same manner...	1a ..	169 136	19 18	1878 1878
<b>Zandvoort</b> One fixed light	52 22.5 4 31.5	N.W. of village, for fishermen. Lifeboat station	● ..	56	4	....
<b>Noordwijk-aan-Zee</b>	52 14.6	Light for fishermen. Lifeboat .....	.. ..	66	5	....
<b>Katwijk-aan-Zee</b>	52 12.	Light for fishing-boats. Lifeboat .....	.. ..	82	6	....
<b>SCHEVENINGEN</b> One rev. red and br. lt.	52 6.3 4 16.2	Dark-brown iron tower. Lt. shows br. & red alternately every ½ minute .....	2b ..	157	18	1850
The lights in the rivers above their entrances are not enumerated here, as they require exact local knowledge to utilise them.						

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.	
<b>HOOK OF HOLLAND CANAL</b>	51 58.4 4 6.7	1. From sandhill on South shore of canal. Upper lt. S.E. & S., 288 yds. from lower lt. In one lead 109 yds. S.W. of N. mole head, and up to white buoy No. 4 ..... 2. On N. shore of canal, near Krimsloot, E. of harbour of refuge, 149 yards apart. In line S.E. & E. lead through the Keel Chan., from N.E. of S. mole lt. up to abreast of E. white leading lt. on North shore ..... 3. On N. shore, near refuge harbour, N.N.W. & W. and S.S.E. & E., 295 yds. apart. Leading lts. for upper part of canal ..... 4. On North mole head when sea admits ..... 5. On centre of S. mole, red seaward, white E. of black buoy No. 3 ..... 6. On Scheur mole, South shore of canal .....	..   ..   10	1873 1877			
<b>VOORNE ISLAND.</b>							
Brielle Harbour One fix. red or br. lt.	51 54.5 4 10.7	On end of mole, North of port. It is bright towards Rozenburg .....	..   16	4	1858		
Steenen Baak	51 55.7 4 8.5	One bright fixed light .....	●   ..	4	....		
Noord Pampus Lt.-V. One fixed bright lt.	51 51.8 4 1.3	Painted red, and moored in 4 fms., near junc- tion of Bokke and Norder Gats .....	..   ..	..	....		
Kwak Hoek	51 49.9	Fixed light on point, 2 miles W. by N. from Hellevoetsluis .....	●   34	8	1869		
Hellevoetsluis One bright or red lt.	51 49.2 4 7.7	On W. jetty head. Light is red from W. & S. to W. & N., and from S.E. & S. to S.E. ....	●   46	8	1858		
<b>GOEREE ISLAND.</b>							
GOEDEREEDE One fixed light	51 49.1 3 58.8	On church tower. Red towards E.N.E. to N.E. by E., over N. Pampus .....	2a   148	18	1856		
Kwaden Hoek One fixed bright lt.	51 50.2 4 0.	Wooden frame, at $\frac{1}{4}$ mile N.E. by E. from Goedereede church light .....	●   115	5	1857		
Izeren Baak One fixed light	51 49.8 3 50.1	On iron beacon, on N. coast, 2 miles N.W. by W. from Goedereede church. Light red between N.N.W. and N. & E. ....	4a   98	10	1858 1872		
<b>SCHOUWEN ISLAND.</b>							
Ossenhoek One bright fixed lt.	51 44.6 3 53.4	On end of pier, W. of Brouwers-haven Road	4a   22	10	1859		
BROUWERS HAVEN GAT Two fixed bright lts.	51 44.5 3 47.2	Red iron and stone towers at Renesse, on N. side of island, E.S.E. & E., 800 yds. apart. In one, lead into the Gat. Lifeboat station	3a   148	16	1848 4a   82	12	...
Verklikker One bright fixed lt.	51 43.5 3 42.9	Guide light on N.W. part of island, to show anchorage. A green lt. at $\frac{1}{2}$ mile to E. & N. ....	..   55	6	....		
SCHOUWEN One rev. br. lt. $1\frac{1}{2}$ m.	51 42.5 3 41.8	A fine stone tower, 166 ft. high, on W. end of island. Shows all round horizon .....	1b   171	20	1744 1840		
<b>WALCHEREN ISLAND.</b>							
Oosterhoofd One fixed red light	51 35.5 3 33.7	Light on sandhill, N. side of Id. Vis. seaward and over Roompot betw. E.N.E. & W.S.W.	●   33	4	1877		
WEST KAPELLE Two fixed bright lts.	51 31.8 3 26.9	1. On old church tower, N.W. pt. of id. Ob- scured E. of N.N.E. to clear Bijneara Banks 2. On tower on sea dyke, 1,530 yds. N. & W. from old lt.; vis. betw. N. by E. & S.W. by S. In line with Westkapelle lt. S. & E. leads thr.ugh East Gat, between Steen Banks ...	1a   144	15	1818 3a   59	13	1876
Domburg One fixed red & br. lt.	51 33.8 3 20.5	On high dune. Red from N.W. & W. to W. by N. & N., & white to southward. While pass- ing red sector, Westkapelle lts. must be kept in line until white lt. is visible, when Knap- duinen lts. must be brought in line .....	4a   ..	..	1876		
Zouteland One bright fixed lt.	51 30.2 3 29.	On a sand hill S. $15^{\circ}$ W. from W. Kapelle lt. Shown up the Oestgat, from S. to S.E. & E.	4a   45	10	1868 Digitized by Google		

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Miles	Visible in Miles	Year established.
<b>WALCHEREN ISLAND—(continued.)</b>						
Kaapduinen	51 28.3	1. On the sand hills. A guide up the Oostgat.	4a	47	11	1866
1. Two br. fix. lts.	3 31.4	In one, S.S.E. $\frac{1}{2}$ E., 378 ft. apart. Shown from N. by W. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ W. ....	..	89	..	....
2. Two br. fix. lts.		2. Shown only to southward, between E. $\frac{1}{2}$ S. and W. $\frac{1}{2}$ S. In line, they lead through S. part of Oostgat and into Flushing Roads ...	..	92	8	1873
Flushing or Vlissingen	51 26.4	1. On Westhaven bastion .....	4a	49	10	....
1. One fixed br. lt.	3 34.7	2. At New Docks, 1873. Red lt. on W. pier, green lt. on East dam, bright light inside entrance .....	..			1873
2. One red, one green, one bright light						
<b>WEST SCHELDE RIVER.</b>						
Nieuwe Sluis	51 24.4	1. Iron tower and frame on the sea bank, opposite Flushing. In one, E. by S., 1,110 yards apart, lead up .....	3a	83	16	1868
1. Two br. fixed lts.	3 30.5	2. Shows red from E. by N. to N.E. by N., at 2,730 yds. westward from W. New Sluis lt. ....	..	43	13	....
2. One red or bright fixed light			●	26	4	....
Breskens	.....	Two fixed lights, on S. side of river .....	..	..	..	....
Borselen	51 25.	Iron tower on W. point of S. Beveland Id., on right bank; red betw. N.N.W. $\frac{1}{2}$ W. and N.W. $\frac{1}{2}$ W., thence br. to N. bank of river	4a	35	9	1847
One fixed bright lt.	3 44.		..			
Nieuwe Neuzen	51 20.7	N. by W. $\frac{1}{2}$ W. and S. by E. $\frac{1}{2}$ E., 330 yards from each other; N. lt. elevated 17 ft. ....	..	17	8	1875
Two fixed lights	3 48.5		..	32	10	....
Terneuse	51 20.5	Iron tower on W. jetty, on N. side of Axel Id.; red W. of N.W. by W. $\frac{1}{2}$ W. ....	4a	43	8	1845
One bright fixed lt.	3 50.		..			
Dendragt	.....	The centre (or lowest) and E. lts. in line, E. $\frac{1}{2}$ S. & W. $\frac{1}{2}$ N., lead in the fairway towards Terneuse. The centre and W. lts. in line, S.W. $\frac{1}{2}$ S., lead in fairway to the northward	..	34	..	1875
Three fixed br. lts.		..	..	16	..	....
..		..	..	32	..	....
Baarland	.....	On point of S. shore of S. Beveland Id. Shows red N. of N.E. ....	4a	13	6	1867
One fixed light						
Biezelingsche-ham	.....	On S. Beveland; guide to the Kapelle Pass. N. by E. and S. by W., 590 yds. apart .....	4a	13	6	1867
Two bright fixed lts.		..	..	39	..	1875
Hanswest	.....	On West side of entrance to canal; red N. of W.N.W. ....	4a	31	9	....
One fixed light						
Welsoorde	.....	On dyke, N. of Welsoorde, S. bank of river ...	4a	30	9	1869
One bright fixed lt.						
Magere Merrie	.....	N.W. $\frac{1}{2}$ W., $\frac{1}{2}$ mile from Welsoorde light .....	..	50	..	1875
One fixed bright lt.						
Groenendyk	51 22.3	E. by S. and W. by N., 756 yds apart. E. lt. red, from E. by N. to E. $\frac{1}{2}$ N.; white, from E. $\frac{1}{2}$ N. to S.E. by E. $\frac{1}{2}$ W. lt. white, from S.E. by E. $\frac{1}{2}$ E. to E. $\frac{1}{2}$ N. ....	..	17	..	....
Two fixed lights	4 2.5	..	..	36	..	....
Rilland	51 24.5	N.N.W. $\frac{1}{2}$ W. and S.S.E. $\frac{1}{2}$ E., 220 yds. apart. S. lt. shows red W. of S. ....	..	27	..	1874
Two fixed lights	4 11.5	..	..	14	..	1874
Bath	51 24.2	N.E. by E. $\frac{1}{2}$ E. and S.W. by W. $\frac{1}{2}$ W. from each other. W. lt. red W. of S.W. by S....	..	30	..	....
Two fixed lights	4 12.5	..	..	23	..	....
Frederik Hendrik	.....	In one, S.S.E. $\frac{1}{2}$ E., lead up channel from Saettinge Lt.-ves. N. lt. red to southward, from W. by N. $\frac{1}{2}$ N. to S. ....	..	..	..	....
Two fixed lights						
Doel	51 18.7	Red over western shore to N., between N. $\frac{1}{2}$ E. and N. by E. $\frac{1}{2}$ E. ....	..	15	..	1874
One fixed light	4 16.					
Liefkenshoek	51 17.8	Near landing place .....	5a	16	..	1874
One fixed bright lt.	4 17.1					
Kruischaans	51 17.6	On cable above ruins of Fort de la Croix .....	5a	16	..	1874
One fixed bright lt.	4 19.2					
<i>Lighthouses.</i>						

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus.	Height above H. W. Visible in Miles.	Year established.
<b>WIELINGEN LT.-VES.</b> One red flashing light	51 22.9 3 10.6	In 4 fathoms; 4 miles N.E. $\frac{1}{2}$ N. from Blankenbergh church; in line with the towns of Lissewege and Bruges. Two cones. Fog-bell .....	●	89   9   1868	
<b>NORTH HINDER LT.-V.</b> One flashing br. lt. ev. 8 or 10 secs.	51 36.7 2 34.5	Has two masts, one red ball; in 20 fathoms, on E. side of bank. Fog Bell and Gong. Red buoy 2 miles to N. $\frac{1}{2}$ E. ....	●	40   11   1858	
<b>WEST HINDER LT.-V.</b> One revol. lt., $\frac{1}{2}$ min.	51 22.5 2 26.4	Two bright, one red flash alternately; in 17 fathoms, at S.W. end of bank; pyramid at mast-head .....	●	40   12   1864	
<b>Knocke</b> One fixed bright light	51 21.3 3 17.5	Stone tower, 68 ft. high, on the Dunes N. of the village .....	3a	87   12   1872	
<b>Heijst</b>	51 20.3 3 14.2	Green fishing light on Custom-house.....	..	26   3   1874	
<b>Blankenbergh</b> 1. One fixed bright lt. 2. One fixed green lt.	51 18.8 3 7.1	1. New tower, 68 ft. high, half a mile W. $\frac{1}{2}$ S. from fort .....	3a	83   12   1872	
		2. On W. mole, to guide fishing boats.....	6a	26   4   1877	
<b>OSTENDE</b> One fixed bright light	51 14.4 2 55.9	Brick tower, 170 ft. high, 820 yds. E. by S. from N.E. angle of fortifications. Shown from W. $\frac{1}{2}$ S. to N.E. $\frac{1}{2}$ N. ....	1a	189   20   1860	
<b>Ostende Harbour</b>					
West Pier	.....	Green light all night. Three lifeboats .....	..	25   7   1849	
<i>East Pier Tide Lights</i>					
1. One red light 2. One red light 3. One or two br. lts.	.....	1. Red lt. on the East pier-head, while 8 feet water; only when the harbour is practicable 2. Red lt. on angle of jetty wall, from 11 till 16 ft. water, when it is extinguished .....	..	25   5   1849	
		3. Bright lt., 300 ft., within E. pier-head, while 16 ft. water; and when 17 ft., a smaller br. lt., 13 ft. below it. In one with West pier green lt., shows direction of channel .....	..	30   5   1868	
			..	40   7   1859	
			..	27   ..   ..	
<b>Miesuport</b> 1. One red fixed light 2. One fixed tide light	51 8.4 2 43.7	1. Brick tower, 90 ft. high, on West side of entrance. Red lt. shown northward, from W. by S. to E. $\frac{1}{2}$ N. 2. Tide lt. on W. side, while 12 ft. water. Two lifeboats.....	3a	96   14   1868	
			..	32   8   1825	
<b>Pannes</b> One fixed green light	51 6.2	Fishing light from iron stand on sandhill near La Pannes.....	6a	49   6   1877	

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	
<b>DUNKERQUE</b>			
1. One rev. br. lt., 1 m. 2. One bright fixed lt. 3. One tidal light 4. One fixed <i>green</i> lt.	51 3. 2 21.8	1. Brick tower, 177 ft. high, between W. jetty and Risbon old fort. Lifeboat station .... 2. On Heuguenar tower, at 2,400 yds. S. by E. $\frac{1}{2}$ from entrance; shows only in the channel to N. by W. & W. .... 3. Lt.-ho. wh., 27 ft. high, 49 ft. within ext. of W. mole. Tide at less than $6\frac{1}{2}$ ft. above low water, & falling, it. shows green, rising red. Tide over $6\frac{1}{2}$ ft. above low water, & rising lt. shows white, varied by flashes. Fog-bell.... 4. On East jetty head .....	* 26   3   1863
<b>DUNKERQUE ROAD.</b>			
Out Ruytingen Lt.-Ves. One rev. <i>red</i> lt., $\frac{1}{2}$ m.	51 12.9 2 12.2	Painted red. In 8 to 11 fathoms. Bears N. by W. $\frac{1}{2}$ W. $1\frac{1}{4}$ miles from Dunkerque lighthouse.....	*   33   11   1863
Dyck Lightvessel Two bright fixed lts.	51 3.1 2 3.5	In 11 fathoms, at $3\frac{1}{2}$ miles N. by W. & W. from Gravelines lighthouse .....	*   34   10   1869 ..   23   ..   ....
Snow Lightvessel One fixed <i>red</i> light	51 3.5 2 12.6	In 11 fathoms, at 5 miles E.N.E. from Gravelines lighthouse .....	*   33   7   1869
<b>GRAVELINES</b>			
1. One fixed bright lt. 2. Two bright fixed lts.	51 0.3 2 6.5	1. Tower, 89 ft. high, on Little Fort Philippe. 2. Tide lts., 65 yds. apart, on S.W. mole, from 2h. before to 2h. after high water. Lifeboat station .....	3a   95   15   1843 *   20   6   1854
Walde Point Br. lt., with <i>red</i> flash, 20 secs.	50 59.7 1 55.1	Iron beacon, 59 ft. high, on edge of sands.....	3b   34   10   1858
<b>GALATE</b>			
One fixed and flash. lt.	50 57.7 1 51.2	Flash every 4 minutes. Octagonal brick tower, 167 ft. high, at N.E. end of old fortifications	1d   190   20   1848
<i>Calais Tide Lights</i>			
1. One br. fix. lt., & two <i>red</i> lights 2. One <i>red</i> light	..... .....	1. On end of E. jetty; br. lt. 10 ft.; red below br. lt., 13 ft.; red above br. lt., 16 ft.; three lts., 30 ft. Fog-bell .....	4a   39   10   ....
		2. On end of W. jetty; all night. Lifeboat station .....	
<b>CAPE GRISNEZ</b>			
One rev. br. lt., $\frac{1}{2}$ min.	50 52.2 1 34.9	Tower, 79 ft. high, $\frac{1}{2}$ mile S. of cape. A powerful MAGNETO-ELECTRIC light.....	1b   226   25   1842 1869
<i>Boulogne Tide Lights</i>			
1. Two fixed bright lts. 2. One <i>red</i> , one <i>green</i> lt.	50 43.9 1 35.1	1. In one tower, on S.W. jetty head; higher lt. while $\frac{1}{2}$ ft.; lower lt., from high water to $\frac{1}{2}$ feet sbb. Lifeboat. Fog-bell .....	4a   43   9   1835 ..   33   ..   ....
		2. On N.E. jetty. Green lt. while $\frac{1}{2}$ ft. water. In line with red lt. indicates direction of stone foundation of the jetty. Life-boat station...	4a   46   7   ....
<b>ALPRECK POINT</b>			
One fixed and flash. lt.	50 41.9 1 33.7	A bright lt., with red flash every 2 min. Tower, 33 ft. high, $\frac{1}{2}$ miles S.W. of Boulogne .....	4d   161   12   1842
<b>CANCHE or Etaples River</b>			
Carniers Sandhills Two fixed lights	50 33.1 1 36.8	Shown from white towers on N. side of river; when in line, bear E. northerly; formerly served as leading lts. Lower lt. is red. In line, lead over Touquet Bank .....	*   121   10   1874 *   54   9   1874
Point Touquet	50 31.4 1 35.5	Two fine brick towers, 171 ft. high, at S. side of mouth of river, N. by E. $\frac{1}{2}$ E. and S. by W. $\frac{1}{2}$ W., 273 yds. apart .....	1a   174   20   1848
<i>Point Haut Banc of Berck</i>			
One br. intermitting lt.	50 24. 1 33.5	Tower, 92 ft. high, on N. pt. of River Authie; lt. visible and eclipsed every 6 seas; obscured toward S. $\frac{1}{2}$ E., and over dangers. Life boat .....	4a   115   14   1868

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Descript ion of Apparatus	Height above H. W.	Visible in Miles.	Year Established.
<b>SOMME RIVER.</b>						
<i>Crotoy tide light</i> One fixed bright light	50 12.9 1 37.3	On N. side of entrance. Tide light, while 3 ft. water in entrance .....	●	25	4	1851
<i>Hourdel Point tide light</i> One fixed bright lt.	50 12.9 1 33.9	On mast, 33 ft. high, on S. side of entrance. Tide light, while 2 ft. Fog-bell .....	●	36	6	1852
<b>CAYEUX</b> One fixed & flash. lt.	50 11.7 1 30.7	Tower, 89 ft. high, on S. side of entrance. Fixed lt., with flash every 4 minutes .....	3d	92	15	1835
<i>Cayeux tide light</i> One fixed bright lt.	.....	On a mast, at 812 yds. S.W. of Cayeux light, from $\frac{3}{4}$ hrs. flood to $\frac{1}{2}$ hrs. ebb .....	●	36	6	1856
<b>St. Valery-sur-Somme</b> 1. One red fixed lt. 2. One fixed green lt.	50 11.5 1 37.5	1. On iron stand, in front of Harold's Tower... 2. From pillar, on mole-head .....	4a ..	25 25	5 5	1868 1877
<b>Treport</b> 1. One red fixed light 2. One fix. br. tide light	50 3.9 1 22.1	1. On iron stand, on end of East jetty..... 2. Brick tower, 37 ft. high, on W. mole. Fog-bell. Bright tide light, while $\frac{4}{5}$ ft., in the channel .....	4a 4a	22 36	5 10	1861 1866
<b>Dieppe</b>						
<i>West Mole</i> One fixed bright lt.	49 56. 1 4.9	Stone tower, 32 ft. high. Flag by day. Fog-bell sounded for 2 min. One ring in intervals indicates 13 ft. water in channel; two rings 16 ft., and so on.....	4a	39	10	1834
<i>East Mole Tide Lights</i> Three fixed bright lts.	.....	On a mast. Lowest lt. all night; highest lt. from 24 hrs. before to 2 hrs. after high water; middle lt. from 2 hrs. before until high water. The two latter not shown when harbour is inaccessible.....	● .. ..	23 31 27	4 .. ..	1843
<b>AILLY POINT</b> One rev. br. lt., 1 min.	49 55.1 0 57.5	Square tower, 66 feet high, on the point. Eclipses not total within 12 miles.....	1b	305	27	1852
<b>St. Valery-en-Caux</b> 1. One red fixed light 2. One bright tide light	49 52.1 0 42.7	1. Red lt. on end of E. jetty. Flag by day ... 2. Tide lt. on brick tower, 31 ft. high, near end of W. jetty, while $\frac{8}{5}$ ft. water .....	4a ●	24 33	5 6	1857
<b>FECAMP</b> One fixed bright light	49 46.1 0 22.1	Square tower, 56 ft. high, on Fagnet Point, above the chalk cliff. Sometimes obscured by fog.....	1a	426	25	1836
<b>Fecamp Harbour</b> <i>Fixed lt., with flash, 3 m.</i>	.....	On N. jetty, while 10 ft. Fixed red lt. on S. jetty .....	4c 4a	39 27	10 6	1838 1859
<b>RIVER SEINE.</b>						
<b>LA HEVE</b> Two fixed bright lts.	49 30.7 0 4.1	Two towers, 66 ft. high, on the summit of the cape, S.W. & S., 69 yds. apart. MAGNETO-ELECTRIC lights .....	1a	397	25	1845
<b>HAVRE</b> 1. One fixed br. lt. 2. Two fixed red lts.	49 29. 0 6.1	1. On N.W. jetty. Fog Trumpet .....	4a	36	10	1842
		2. One on S. pier in line with another on great quay lead into harbour..... A lantern, with coloured glasses, on the quay. Lifeboat station.....				
<b>Hoc</b> One fixed bright lt.	49 28.8 0 11.2	On the point, N. bank of River Seine .....	4a	39	10	1841
<b>Mesnil</b>	.....	One fixed lt., $\frac{1}{2}$ mile from Tancarville .....	4a	23	7	1861

Name and Character of Light.	Lat. N. Long. E. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of appearance	Height above H. W.	Visible in Miles.	Year established.
<b>RIVER SEINE—(continued).</b>						
Quillebeuf	49 28.5	S. shore of River Seine. On N. end of quay...	5a	33	10	1862
One fixed bright lt.	o 31.5	Between Quillebeuf and Caudebec several fix. lts. are shown on either bank of the river. Between Caudebec and Rouen, 15 br. lts. on the right bank, and 12 red lts. on the left bank of the river, are shown .....				
La Roque	.....	Bright fixed light on South point.....	4a	180	18	1867
La Roque Bank	.....	One red light on extreme of spit .....	..	..	..	1863
Rille River	.....	One red fixed light to South .....	4a	33	7	1867
Seine Canal	.....	One bright fixed light on North embankment ..	..	..	5	1850
Berville	.....	One bright fixed light $\frac{1}{2}$ mile West of church	1d	420	20	1850
<b>FATOUVILLE</b>	49 24.9	Octagonal tower, 105 ft. high, on the heights. Bright lt., with red flash, every 3 minutes...	1d	420	20	1850
One fixed & flash. lt.	o 19.4					
<b>Honfleur</b>	49 25.5	1. On hospital jetty, N.W. end of town. Bell 2. White iron tower, 39 ft. high, on W. pier... 3. From brick tower on end of E. pier. Shown while 64 ft. or more water in channel. Additional depth shown by flashes; each red flash indicates 3 ft. 3 $\frac{1}{2}$ in. (1 metre) additional, and each green flash 10 in. ( $\frac{1}{2}$ metre) .....	3a	82	14	1857
1. One fixed br. lt.	o 13.6	4. At extreme of breakwater constructing .....	..	33	6	1876
2. One fixed red light			..	39	9	1876
3. Tidal lights						
4. One fixed green lt.						
<b>TROUVILLE</b>						
1. Deauville	49 21.8	1. On W. side of entrance to Touques River. Visible between N. by E. and W. by N. & N.	4a	62	10	1853
One red fixed light	o 4.7	2. Near end of East Pier.....	4a	33	7	1860
2. East Pier		3. Near end of W. Pier; lighted when 6 $\frac{1}{2}$ ft. in channel. Br. seaward, red to E. of N.E. by N. up Villerville Chan., and inside entr.	5a	26	8	1875
One green fixed lt.						
3. West Pier						
One tide light						
<b>Dives</b>	Long. W.					
Two red tide lights	49 17.7	On Beuzeval Mount and Fort, while 6 ft. water.	..	148	9	1866
	o 5.3	In one, lead in.....	..	10	7	
<b>L'Orne River</b>	49 16.6	Bright lts. on church and redoubt of Oystreham, W. side of entrance. In one, S.W. & S., 1,203 yds. apart. Red tide lt. on W. jetty, from 3 hrs. before to 3 hrs. after high water	5a	92	10	1843
Two fixed bright lights	o 15.6	On E. side of channel, at Oystreham; shown from 3 hrs. before to 3 hrs. after high water	●	39	5	...
One red tide light			●	..	4	1855
One green light			●	30	4	1878
<b>Courseulles</b>	49 20.3	On a mast, on W. jetty head .....	●	30	6	1857
One fixed bright light	o 27.5					
<b>POINTE DE VER</b>	49 20.5	Square tower, 43 ft. high, on a hillock, 800 yards from the shore. Fixed lt., with flash	3d	138	15	....
One fixed & flash. lt.	o 31.2	every 4 minutes .....				
<b>Port-en-Bessin</b>	49 21.1	In one, S.W. by W., 79 yds. apart. High tide lt. is red, while 12 ft. on the bar .....	●	131	8	1854
Two fixed lights	o 45.6	..	92	6		
<b>Grandcamp</b>	49 23.4	On a mast, 875 yds. West of church .....	●	26	3	1856
One fixed bright light	i 2.6					
<b>Port D'Isigny</b>	49 19.3	In one, S. by W. & W., 306 yds. apart, lead in	●	46	10	1852
Two fixed bright lights	i 6.7	..	23	8		
<b>Carentan</b>	49 20.6	Bright lt. at Brevand; red lt. on sea bank.	●	49	7	1868
One red, one bright lt.	i 11.3	In one, S.W. & W., lead in .....	..	16	7	

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>St. Marcouf</b> One fixed bright light	49 29.9 1 8.9	On the fort, East of Sand-fly Island .....	4a	66   10   1840		
<b>Mersaline</b> One fixed bright light	49 34.3 1 19.4	On the mound; much higher than La Hougue light. In one with it, shows N. limit of roads	5a   232   10   1838			
<b>St. Vaast La Hougue</b> One red fixed light	49 34.2 1 15.6	A small tower, 29 ft. high, on jetty. Fog-bell	..   36   5   1865			
<b>La Hougue</b> One fixed bright light	49 34.3 1 16.4	Square turret, 29 ft. high, at S. end of fort ...	4a   36   10   1838			
<b>Saire Point</b> One fixed bright light	49 36.4 1 13.9	On Reville Redoubt. In one with Capo Barfleur lt., shows E. limit of dangers off Tatihou Island.....	4a   36   10   1838			
<b>Barfleur</b> Two fixed bright lights	49 40.1 1 15.8	On South side of entrance, S.W. by W. & W., 309 yds. apart. In one, lead in. Lifeboat ...	6a   23   8   1844 6a   43   9   ....			
<b>CAPE BARFLEUR</b> One br. rev. lt., $\frac{1}{2}$ min.	49 41.8 1 16.	Circular tower, 233 ft. high, on the cape. Eclipsees not total within 12 miles .....	1b   236   22   1838			
<b>Levi Cape</b> One fixed and flash. lt.	49 41.8 1 28.5	Tower, 103 ft. high. Light bright, with red flash every 3 minutes .....	4d   115   12   1858			
<b>Béquet Port</b> One bright, one red lt.	49 39.2 1 32.9	In one, S.W. & S., 76 yds. apart, lead into the harbour .....	..   28   9   1862 ..   24   7   ....			
<b>CHERBOURG.</b>						
<b>Port de Commerce</b>	.....	Red lt. on E. jetty, green lt. on head of W. jetty .....	4a   33   3   1838 4a   15   2   1876			
<b>Pelee Island</b> One fixed bright lt.	49 40.3 1 35.1	On Fort Imperial .....	5a   85   10   ....			
<b>La Digue</b> 1. One fix. & flash. lt. 2. One fixed green lt. 3. One red light	49 40.1 1 37.2 1 35.1	1. A white stone tower, 54 ft. high. Lt. br. fixed, with flash every 3 min., on central fort. 2. Green light on eastern head .....	5d   66   10   1839 ..   63   4   1853 ..   39   10   1863			
<b>Querqueville Fort</b> One fixed bright lt.	49 40.3 1 41.1	Turret, 52 ft. high, on the guard-house. Life-boat station .....	4a   59   10   ....			
<b>CAPE DE LA HAGUE</b> One fixed bright light	49 43.4 1 57.3	Circular tower, 154 ft. high, on the top of Gros du Raz Rock, half a mile W. & S. from the cape .....	1a   157   18   1837			

## CHANNEL ISLANDS (British).

<b>Alderney</b>						
<b>Bray Harbour</b> Two red lights	49 43.3 2 12.1	One on old pier; screened over all dangers. The other to S.W. by W. In one, they lead in	..   55   .5   1859 ..   25   3   ....			
<b>CASKETS or Casquets</b> One flashing bright lt.	49 43.3 2 22.7	Tower on the highest rock. Light shows 3 flashes of 2 seconds, in quick succession, once in ev. $\frac{1}{2}$ min. Fog-horn gives 3 short blasts, of 3 secs. duration, once in ev. 5 min.	..   113   15   1723 ..   ..   ..   1877			
<b>HANOIS ROCKS</b> One red rev. lt., 45 secs.	49 26. 3 42.2	A grey granite tower, 117 ft. high, on S.W. rock; obscured by Guernsey, from W. by S. to N.W. Fog Bell every 15 secs.....	1b   100   14   1862			
<b>Guernsey</b>						
<b>St. Peter Port</b> 1. One red fixed lt. 2. One br. fixed lt.	49 27.2 2 31.5	1. At entrance of inner harbour; bearing W. by N. & N., it leads in .....	4a   40   6   1832 3a   69   12   1867			
		2. On E. extremity of Castle Cornet break-water. A temporary green lt. on N. jetty...				

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H.W.	Visible in Miles.	Year established.
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## CHANNEL ISLANDS (British)—continued.

## Jersey

Verclut Breakwater	49 13.3	White iron tower, on the outer end, in St. Catherine's Bay .....	5a	60	10	1857
One fixed bright lt.	2 0.5					
St. Helier	49 10.5	1. Br. lt. on Victoria or new S. pier .....	●	31	6	1858
1. One fixed br. lt.	2 7.3	2. Red lt. on Albert or N. pier .....	●	15	3	1859
2. One fixed red lt.		3. Red lt. on upper pier road .....	..	46	3	1858
3. One fixed red lt.		4. On Albert pier and esplanade .....	..	23	3	1867
4. Two green lights						
Goeray Pier Head	.....	One fixed bright light .....	..	55	..	1857
LA CORBIERE ROCK	49 10.7	Tower 62 ft. high. Lt. is bright seaward from N. by W. to S. by E., and red eastward of these bearings, to N.E. over Rigdon Bank, and to S.E. over Les Vracheres. Fog-bell 3 stroked once in ev. half min. .....	2a	119	17	1874
One br. or red fix. lt.	2 14.8					
Dielette	49 33.3	1. On end of ne. pier; shows br. seaward and red from N.N.W. towards land over Huetts de Jerbourg and Basses St. Gilles. In line with inner red I.S.S.E. & E., leads in .....	..	23	9	1876
1. One fix. red or br. lt.	1 52.	2. At head of harbour. Lifeboat .....	●	75	9	...
2. One fixed red light		3. On old jetty head .....	..	23	6	1856
3. One fixed green lt.						
CAPE CARTERET	49 22.4	Square tower, 49 ft. high, 100 yds. E. of cape. Life-boat station .....	2b	262	18	1839
One rev. br. lt., $\frac{1}{2}$ min.	1 48.5					
Portball	49 20.	On church tower and Pointe Dune. In one, S.W. & S., 953 yds. apart, they lead in .....	4a	64	8	1859
One bright, one red lt.	1 43.		●	33	6	
Senequet	49 5.5	Tower, 77 ft. high, on the Senequet Rock, in Deroute Passage .....	3a	55	10	1861
One fixed red light	1 39.8					
Regneville	49 0.5	Square tower, 24 ft. high, on Agon Point .....	4a	33	10	1856
One fixed bright light	1 34.9					
CHAUSEY ISLANDS	48 52.2	Square tower, 56 ft. high, on S.E. point. A br. lt., with red flash every 4 minutes .....	3d	121	15	1847
One fixed and flash. lt.	1 49.4					
MINQUIERS LT.-VES.	48 53.6	Near S.W. extreme of plateau; two black balls. Fog-bell .....	4a	39	10	1865
Two bright fixed lights	2 17.5		..	26	8	
GRANVILLE	48 50.1	1. Tower, 43 ft. high, on Granville Rock, or Cape Lihou .....	3a	154	15	1826
1. One fixed bright lt.	1 36.9	2. Red lt. on S.E. end of mole head, W. side of entrance. Lifeboat .....	4a	40	4	1839
2. One fixed red light						
Couesnon River	48 38.2	On W. side of Mont St. Michel, from 2 hours before to $\frac{1}{2}$ hour after high water .....	4a	56	6	1871
One fixed red light	1 30.8					
La Pierre de Herpin	48 44.	Proposed on rock, West of St. Michel Bay .....	..	..	..	...
Proposed light	1 49.3					
La Houle	48 40.2	Tower, 37 ft. high, on La Fenetre Island, at Cancalle .....	4a	33	6	1863
One fixed red light	1 51.2					
ST. MALO						
Ballue	48 37.6	Square tower, upper part black, on the hills, at 1,804 yds. S.S.E. & E. from Sablons lt. ....	●	221	9	1868
One green fixed light	2 0.3					
Anse des Sablons	.....	Shown in place of fixed green lt. Kept in line with fix. green lt. at Ballue, bearing S.S.E. & E., will lead to road of St. Malo .....	●	60	8	1877
One flashing green lt.						
St. Malo	48 39.	Tower, 31 ft. high, on the mole des Noirs .....	4a	33	10	1842
One bright fixed lt.	2 1.7					
Le Grand Jardin	48 40.2	Tower, 92 ft. high, on S. end of islet. Light bright; flashes red and green alternately every 20 secs. ....	4d	65	12	1868
One fixed & flash. lt.	2 5.1					
Roche Bonne	48 40.3	Tower, 59 ft. high, N. of St. Hyduse. Light shown from W. by N. & N. to N.W. by W. & W. ....	●	128	6	1868
One red fixed light	1 38.8					

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CAPE FREHEL</b> One rev. br. lt., $\frac{1}{2}$ min.	48 41.1 2 19.2	Otagonal tower, 72 ft. high, on the cape, S.W. from old tower .....	1b	259	22	1847
<b>Legue Port</b> One fixed bright light	48 32.2 2 43.2	Round tower, 40 ft. high, on the jetty at Point Aigle, St. Brieuc.....	4a	45	10	1857
<b>Illes Saint Quay</b> One fixed bright light	48 40. 2 48.6	Tower, 33 ft. high, on Harbour Island .....	4a	49	10	1850
<b>Binic Port</b> One fixed bright light	48 36.1 2 49.	Round tower, 33 ft. high, on Penthievre mole .....	4a	36	10	1854
<b>Portrieux</b> One fixed red light	48 38.8 2 49.5	White tower, 33 ft. high, on end of pier.....	●	29	3	1853
<b>Trieux River</b> 1. Two br. flash. lts., 8 s. 2. Two red fixed lts.	48 50.2 3 3.2	1. On Bodic heights, on W. side of channel; and on La Croix Rock, on E. side; 2 miles apart. Shown only in channel .....	..	176	12	1867
		2. On end of Coat-Mer Peninsula. In one, S. 39° E., lead up from La Croix lt. to the anchorage.....	..	45	10	
			●	151	8	1869
<b>Brehat Isle</b> Two fixed red lights	48 51.9 2 59.3	On Paon Rock and Rosedo Hill. In one, W. $\frac{1}{2}$ S., $\frac{1}{2}$ mile apart. Lifeboat station .....	4a	67	6	1860
<b>ROCHES DOUVRES</b> One flashing light	49 6.5 2 48.9	A fine iron tower, painted white, 118 ft. high. Eclipsed every 4 secs. A Fog-bell ev. 3 secs.	1b	180	25	1869
<b>HEAUX DE BREHAT</b> Red fixed light, and red flashing light	48 54.5 3 5.3	A circular tower, 157 ft. high, on N.E. side of rocks. A red flashing lt. is shown to N.E. over Barnouic Ledge, betw. E.N.E. & E. $\frac{1}{2}$ N. A red fix. lt. is shown to S.E. over the dangers betw. S.E. $\frac{1}{2}$ S. & E. by S. $\frac{1}{2}$ S. Between these two sections of red lt. is a space of 23° clear of danger, except the Roch-ar-Bel.....	1a	148	..	1835
<b>SEPT ILES</b> One fixed and flash. lt.	48 52.7 3 29.5	Tower, 52 ft. high, on E. end of Ile aux Moines. Flash every 3 min. Hidden to E. $\frac{1}{2}$ N. by Rouzie Island, &c. .....	3d	184	15	1835
<b>TRIAGOZ</b> One fixed and flash. lt.	48 52.3 3 38.9	Tower, 92 ft. high, on Guen Bras Rock; red and bright flashes alternately every $\frac{1}{2}$ min.	3d	98	12	1862
<b>Treguier River</b> 1. Outer fixed br. lt. 2. Inner red light 3. One fixed light	48 51.5 3 8.	1. 2. Bright light on Harbour Mill; red lt. on St. Antoine Mill. In one, S.S.E., lead into the Grand Passe.....	4a	105	9	1864
		3. Shown from La Corne Rock. Sector of 7½° green lt. in channel to E.N.E., red S. of that bearing. A sector of 7½° br. lt. over inner anchorage to W.S.W. Enter with white & red lts. in line S.S.E. until green lt. appears, when steer for it, pass westward of La Corne Rock, and anchor with br. lt. in sight .....	4a	46	6	
			..	38	..	1876
<b>Perros Road</b>						
1. One fixed bright lt. 2. One fixed bright lt.	48 48.1 3 23.9	1. Near Nantouar Bridge .....	●	33	10	1860
		2. Near Kerjean Farm, 750 yds. S.E. of No. 1. In one, they lead up the western channel .....	●	253	12	1860
3. One bright fixed lt. 4. One bright fixed lt.	48 46.7 3 28.4	3. Behind Pigeon-house, on S. shore of bay .....	●	89	12	1860
		4. Near Kerprigent Mill, 8,133 yds. S.W. of Pigeon-house lt. In one, they show the direction of the eastern channel, and into the road .....	●	259	14	1860
<b>Ploumanac'h Port</b> One fixed red light	48 50.3 3 29.1	Square tower, 36 ft. high, on the point .....	4a	69	5	1860
<b>Morlaix</b>						
1. Ile Noire One fixed & flash. lt.	48 40.4 3 52.6	1. Square tower, 43 ft. high. Light, with flash every 2 min. Fog-bell. Tidal signals for Treguler Channel .....	4d	46	10	....
2. Tour la Lande One fixed bright lt.	48 38.2 3 53.2	2. Square tower, 56 ft. high. Nos. 1 and 2 in one, show the direction of the eastern channel .....	●	..	..	....
3. One red fixed light 4. One bright fixed lt.	..... .....	3. On the Chateau du Taureau for the anchorage in N. part of Morlaix Road .....	●	34	2	....
		4. On Jardin or Louet Island. Nos. 4 and 2 in one, show the entrance of the western or Grand channel. Pilots necessary.....	4a	52	10	1860

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
ILE DE BAS One rev. br. lt., 1 min.	48 44.7 4 1.7	Circular tower, 131 ft. high, on W. part. A bell buoy on the Basse Plate .....	1b   233   24   1836			
Pte. de Pontusval One bright fixed light	48 40.7 4 21.2	Square building, 43 ft. high, on the point .....	a   59   10   1869			
ILE VIERGE One fixed and flash. lt.	48 38.4 4 34.2	Square tower, 101 ft. high, on E. point. Bright fixed light, with red flash every 4 minutes...	3d   108   15   1845			
Abervrac'h						
1. One red fixed light	48 36.9	1. White tower, 36 ft. high, on Vrac'h Island.	4a   59   7   1845			
2. One bright fixed lt.	4 34.7	Life-boat station .....	4a   170   12   1868			
		2. On W. side of Plouguerneau Steeple, at 70 ft.; both its. shown down the channel. In one, S.E. by E., $\frac{1}{2}$ mile apart, lead into the channel.....				
3. One green fixed lt.	48 35.8	3. On E. point of Palue Beach .....	●   29   3   1845			
4. One bright fixed lt.	4 33.5	4. At head of St. Antoine Creek. In one, lead to anchorage .....	4a   49   4			
OUESSANT, or USHANT						
1. One bright fixed lt.	48 28.5	1. Two towers united, 85 ft. high, on the N.E. point .....	1a   272   24   ....			
2. One rev. lt., 20 secs.	5 3.5	2. Circular tower, 152 ft. high, black and white bands, on Creac'h, or N.W. point. Light twice bright, once red. Fog-trumpet.....	1b   223   22   1864			
LE FOUR ROCK	48 31.3	Stone tower 22 ft. high. Lt. bright and fixed for 30 secs.; then 8 flashes in 30 secs. Steam fog-trumpet, blasts of 5 secs. every 20 secs.	3b   92   15   1874			
One alternating fixed or flashing light	4 47.5					
Conquet Port	48 21.7	Square tower, 59 feet high, on Kermorvan Point. Lifeboat station .....	3a   72   12   1849			
One fixed bright light	4 47.5					
LES PIERRES NOIRES	48 18.7	Square tower, 82 ft. high, on Le Diamant Rock.	3b   90   12   1872			
One red flashing light	4 55.	Flash every 10 secs. Rocks stretch $\frac{1}{2}$ of a mile to S.W. .....				
ST. MATHIEU	48 19.8	Tower, 82 ft. high, on the point .....	2b   177   18   1835			
One rev. br. lt., $\frac{1}{2}$ min.	4 46.7					
BREST						
Minou Point	48 20.2	Tower, 79 ft. high, on Petit Minou Point .....	3a   105   15   1848			
One fixed bright lt.	4 37.					
Portzic Point	48 21.5	Tower, 108 ft. high, 4 miles E. $\frac{1}{2}$ S. of Minou light. In one with Minou light, N. $89^{\circ}$ E. true, leads clear to the entrance of Brest Channel.....	2d   184   18   1848			
One fixed & flash. lt., 3 min.	4 32.2					
Brest	48 22.7	1. White iron towers on the jetty heads of Port Napoléon. Fog-bell .....	4a   33   7   1868			
1. One green, 1 red lt.	4 29.2	2. At Commercial Port. Br. lt. at end of E. pier, red lt. on W. end of S. pier .....				
2. One bright, 1 red lt.						
Brest, Bay of	48 19.2	On Capucina Pt., W. side of Kelern Peninsula. Lt. shown eastward betw. E. $\frac{1}{2}$ N. & E. by S. To the northward a ray of it. is shown over Lee Fillettes Rocks .....	3a   207   13   1864			
One bright fixed lt.	4 34.6					
Toulinguet Point	48 16.8	Square tower, 39 feet high, on S.W. side of entrance. Lif-boat .....	4a   161   10   1849			
One fixed red light	4 37.9					
Douarnenez Bay	48 6.2	Round tower, 31 ft. high, on summit of Ile Tristan. Lifeboat station .....	4a   114   10   1857			
One fixed bright light	4 21.4					
Port Douarnenez	48 5.8	Iron pillar on Rosmeur mole .....	..   23   5   1872			
One fixed red light	4 19.5					
ILE DE SEIN	48 2.7	Round tower, 142 ft. high, on North point of island. Bright flash every 4 min. Lifeboat station. (Proposed to be shifted to West extreme of Chaussée) .....	1d   148   20   1843			
One fixed and flash. lt.	4 52.					
Armen Rock	.....	Lt.-ho. building on western part of Chaussée de 8 in, 42 miles West of Isle de Sein lt.-ho. ....				

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Mile.	Year established
<b>RAZ DE SEIN</b>						
TEVENNEC ISLAND One flashing lt. every 4 secs.	48 4.3 4 47.8	Lt.-ho. of brick, 52 ft. high; lt. shows white in channel to S., betw. S. & W. and S. by E.; red from S. by E. to S.E. & E.; and white to N., from S.E. & E. to W. by N. & N.; obscured over the Chausee de Sein.	..	92	13	1875
POINTE DU RAZ Two fixed bright lts.	48 2.4 4 44.1	In one with Ile de Sein lt., shows direction of Chausee. High lt. from square tower, 49 ft. high. Lower lt., 220 yds. distant, shows only 2 sectors, one over La Vieille rocks, betw. W. and N.W. & W.; the other betw. N. by W. & W. and N. by E. in channel to E. of Tevennec. These two lts. in line lead on to the Plate Rock W. of Tevennec.	1a ..	259 207	18 10	1843 1875
Audierne Port 1. One fixed red light 2. One fixed bright lt.	48 0.6 4 32.5	1. On Raoulic Point ..... 2. Near Capuchin Garden. In one, N.E. & N., 1,203 yds. apart, lead clear of Gamelle Rocks	● 5a	36 69	5 12	1656
PENMARCHE POINT One rev. br. lt., $\frac{1}{2}$ min.	47 47.9 4 22.6	Circular tower, 181 ft. high, on the point, near the church of St. Pierre.	1b	135	22	1835
Gulfinec Two red fixed lights	.....	At 3 miles eastward of Penmarch. Shown only through the channel. In one, E. by N. & N., 620 yds. apart, lead in .....	.. ..	50 19	9 4	1871
Loc-Tudy One bright fixed light	47 49.9 4 9.6	Round tower, 31 ft. high, on S. side of Font l'Abbe River entrance .....	4a	35	10	1863
Odet River One fixed red light One bright light	47 52.3 4 6.8	Round towers, 36 and 30 ft. high, on Coq Point. In one, S. & W., 261 yds. apart, lead in .....	4a ●	33 56	7 9	1848
GLENAN ISLANDS One fix. red, bright and green light	47 46.5 4 1.8	Lt.-ho., a brick tower, 49 ft. high, on Isle aux Moutons. Lt. red betw. N. by W. & W. and W. by N., green betw. W. by N. & W. by S. & S., br. over fairway betw. S. & S. & S. W. & W., red betw. S.W. & W. & S.E. & E., & br. betw. S.E. & E. and N. by W. & W. ...	.. .. ..	59 .. ..	12 8 7	1878
PENFRET One fixed and flash. lt.	47 43.3 3 57.3	Square tower, 73 ft. high, on North point of Island; one of the Glenan Islands. Fixed lt., with flash every 4 minutes .....	3d	118	15	1838
Concarneau Two fixed bright lights	47 52.2 3 55.4	On Croix Battery, and betw. Concarneau and Beuze. In one, N.E. & E., 2,052 yds. apart, show Concarneau Road .....	4a ●	46 177	9 12	1849
Lanrec Aven River White, red, or green lt.	..... 47 48.1 3 44.5	Red light on E. shore of Concarneau Port .....	●	135	9	1857
Douelan Port Two bright fixed lights	47 46.3 3 35.7	On the Bee-ar-Veehen. Bright lt. in fairway, from W. by S. & S. to E. by E.; red to S.; green to N. ....	..	125	8	1868
ILE DE GROIX 1. One fixed bright lt. 2. One fixed & flash. lt.	47 38.9 3 30.8	1. Square tower, 75 ft. high, on Penmen Pt., at N.W. end of Island, $\frac{1}{2}$ a mile in-shore.. 2. Square tower, 39 feet high, on Fort de la Croix, on E. part of island. Red flash every 3 minutes. Lifeboat station .....	1a 4d	194 171	18 10	1839 1845
L'Orient 1. Two fixed bright lts. 2. Two fixed bright lts. 3. Two fix. leading lts. 4. Two fix. leading lts.	47 44.9 3 20.8	1. One on church tower, one at Laperriere. In one, N.N.E. & E., lead into Little Passage .. 2. E. side of Grand Passage. In one, E. & N., lead into Grand or Western Passage .. 3. At Keroman Creek. High red lt.; lower green lt., S. 12° W. from high lt. In one, lead between Turen Bank and opposite shoals .. 4. At Kernevel Bay. High lt. red; low lt. green, N.E. & E., 328 yds. from high lt. In line astern indicate channel, from their intersection with the line of Keroman lts. to Penman anchorage ..	● ● 44- 10 30 5	148 20 62 .. 10 9	12 9 12 .. .. 9	1852 1850 1857 1877 1877 1877
Etel River One fixed red light	47 38.7 3 12.9	On a house, at entrance of river. Lifeboat station .....	4a	20	3	1859
BELLE ILE Sauzon Port One fixed red light	47 22.4 3 13.2	Circular turret, 27 ft. high, on end of mole. Lifeboat station .....	4a	30	7	1859
Palais Port One fixed bright lt.	47 20.9 3 9.3	Circular turret, 27 ft. high, on mole head, S. side of entrance .....	4a	30	10	1836

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BELLE ILE</b> —(continued).						
<b>GOULFAR BAY</b> One rev. br. lt., 1 m.	47 18.7 3 13.7	Circular tower, 151 ft. high, on S.W. part of island.....	1b   276   27   1836			
<b>PTE. DES PQUELAINS</b> One br. flash. lt., 5 s.	47 23.3 3 15.2	Square white tower, 54 ft. high, on N. point. In one with Gouifar Bay lt. clears Birvi-deux.....	3d   112   14   1868			
<b>Heddie Island</b> One fixed bright lt.	47 20.5 2 52.2	Tower, 38 ft. high, 600 yds. W. from E. point of island .....	4a   85   10   1836			
<b>QUIBERON BAY</b>						
<b>La Teignouse</b> One fix. & flashing lt., 3 min.	47 27.4 3 2.8	Circular tower, 51 ft. high, on the rock, S.E. of Quiberon Peninsula. In one with Naval light, leads to W. entrance of Pass .....	4d   59   12   1848			
<b>Port Haliguen</b> One fixed bright lt.	47 29.2 3 5.9	Tower, 37 ft. high, on N. jetty. Lifeboat station .....	4a   40   10   1856			
<b>La Crac'h</b> One red, one br. lt.	47 34.1 3 0.4	On left bank of river, N. by E. and S. by W., 574 yds. apart; red lt. to S. In one, lead in .....	4a   29   9   1856 •   69   10   ...			
<b>Navalo Port</b> One fixed bright lt.	47 32.9 2 54.2	Tower, 33 ft. high, on the S. point of entrance to Morbihan. In one with Teignouse light, leads to W. entrance.....	4a   79   15   1864			
<b>Penlan Point</b> One fixed bright light	47 31. 2 30.2	Tower, 31 ft. high, on the point .....	4a   52   10   1844			
<b>LE FOUR</b> One rev. br. lt., $\frac{1}{2}$ min.	47 17.9 2 38.1	A round stone tower, 93 ft. high, on the rock .....	2b   79   18   1822			
<b>Croisic Port</b> Two fixed bright lights	47 17.9 2 31.1	On a mast near the church, N. and S., 50 yds. apart. In one, they lead in .....	•   13   6   1836 ..   33   ..   ...			
<b>Trehic Jetty</b> One br. or red fix. lt.	47 18.5 2 31.5	Stone tower, 33 ft. high, at entrance to Port Croisic. Lt. bright to between N.N.W. and W.N.W.; the rest red .....	5a   39   10   1874			
<b>La Banche</b> One fixed red light	47 10.6 2 27.2	Stone tower, 67 ft. high, on the Ture Rock .....	..   70   9   1865			
<b>Port Pouliguen</b> One fixed bright light	47 16.5 2 25.8	On jetty head; only visible from S. to S.E....	..   23   6   1871			
<b>LOIRE RIVER</b>						
<b>Point l'Eve</b> One fixed red light	47 14.5 2 16.1	Marks the channel to the town of St. Martin .....	6a   102   6   1856			
<b>Aiguillon Tower</b> One fixed bright lt.	47 14.6 2 15.9	Circular tower, 67 ft. high .....	3a   118   12   1857			
<b>Commerce Tower</b> One fixed & flash. lt., 2 min.	47 15.4 2 15.1	Circular tower, 106 ft. high. In one with Aiguillon light, cuts E. part of Charpentier Bank; therefore keep it open a little to East. Flash every 2 minutes.....	3d   198   14   1857			
<b>Ville-es-Martin Point</b> Red revol. lt., $\frac{1}{2}$ min.	47 15.4 2 13.4	Stone tower, 41 ft. high .....	3b   33   10   1865			
<b>St. Nazaire</b> One fixed bright lt.	47 16.3 2 11.9	On new mole head. Tide Signals .....	4a   26   8   1836			
<b>Paimbœuf Port</b> One fixed bright lt.	47 17.4 2 2.	End of mole.....	4a   26   8   1855			
<b>Pierre a l'Œil</b> One fixed red light	.....	From stone tower, 48 cables W. of Paimbœuf lt., in line with which, bearing S. 75° E., leads in main channel of Loire River .....	..   15   8   1876			
Lights are proposed at St. Nicholas Island and Mindin Tower.						

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Mile.	Year established.	
<b>PorNIC Port</b> One fixed bright light	47 6.6 2 7.	Square tower, 86 ft. high, on Noveillard Point	4a	59	9	1846	
<b>PILIER ISLAND</b> One fixed and flash. lt.	47 2.6 2 21.7	Round tower, 97 ft. high, on N.W. point. Flash every 4 min. Red sector covering La Couronne Reef; and another over the Plateau des Bœufs.....	2d	105	18	1829	
<b>Noirmoutiers Island</b> One bright or <i>red</i> light	47 0.7 2 12.9	Square tower, 52 ft. high, on Pte. des Dames; white to seaward; red lt. to westward; from E. by S. to N. by E. & E. Red sector over Plateau des Bœufs.....	a	111	10	1867	
<b>ILE D'YEU</b> One fixed bright light	46 43.1 2 23.	Circular tower, 106 ft. high, on mound of Petit Foule, 1,860 yds. from N. point .....	1a	177	18	1862	
<b>Breton Port</b> Two fixed bright lts.	46 43.6 2 21.	One on outer jetty, N. side of entrance; and one at head of harbour, 284 yds. apart. In one, lead in. A red lt. is shown on S. side of entrance .....	4a	26	8	1837	
<b>Pte. des Corbeaux</b> One red fixed light	46 41.4 2 17.2	Stone tower, 38 ft. high, on S.E. point. Life-boat station .....	4a	66	9	1845	
<b>St. Gilles-sur-Vie</b> One fixed <i>red</i> light	46 41.8 1 56.9	Tower, 27 ft. high, on extremity of N. side of jetty .....	4a	39	7	1852	
<b>Sables d'Olonne</b> 1. One fix. bright lt. 2. One fix. bright lt. 3. Two fixed <i>red</i> lts.	46 29.7 1 47.4	1. Tower, 85 ft. high, at La Chaume, on W. side of entrance to Olonne..... 2. On jetty, E. side of entrance. In one with La Chaume lt., shows direction of Great Channel. Lifeboat station..... 3. S.E. of town. In line, E. by N. & N., lead up S.W. pass. Two red lts. are also shown on Chaume quay, as leading lights between the jetties.....	4a	105	12	1826	
				4a	23	8	1855
<b>BARGES D'OLONNE</b> One br. lt., with <i>red</i> flash	46 29.7 1 50.7	Circular tower, 90 ft. high, on the Grand Bank; red flash every 3 min.; bell buoy half a mile to S. ....	3c	75	15	1866	
<b>ROCHE BONNE LT.-VES.</b> Two bright fixed lights	45 12. 2 20.8	Painted red, in 26 fms., on E. part of plateau. Three masts of equal height, and balls on two of them. Fog-bell .....	●	46	10	1866	
			..	33	..	....	
<b>PERTUIS BRETON</b>							
<b>Grouin du Cou Point</b> One fixed bright lt.	46 20.7 1 28.1	Square tower, 46 feet high .....	4a	92	10	1859	
						1867	
<b>Aiguillon Point</b> One fixed bright lt.	46 16.2 1 12.4	Wooden beacon, 38 ft. high, bearing S. by E., leads on to middle channel.....	4a	33	10	1859	
<b>ILE DE RE</b>							
<b>BALEINES</b> One rev. br. lt., $\frac{1}{2}$ m.	46 14.7 1 33.8	Octagonal tower, 164 ft. high, on N.W. point. Flashes of unequal brilliancy.....	1b	164	22	1854	
<b>HAUT-BANG DU NORD</b> One fixed bright lt.	46 15.8 1 35.3	Circular tower, 96 ft. high, on the shoal, 1 $\frac{1}{2}$ mile north-westward of Baleines Point .....	3a	72	15	1854	
<b>Mer du Fief</b> One <i>green</i> , one br. lt.	46 14. 1 29.	At W. side of entr. Upper lt. green; lower lt. br., E. & S., 370 yds. from upper lt. In line, lead into Mer du Fief.....	..	36	5	....	
			..	28	5	....	
<b>St. Martin Port</b> One fixed <i>red</i> light	46 12.4 1 21.9	On angle of demi-bastion, East of entrance. Shown seaward from S. by E. to N.W. by W. true.....	4a	52	6	1867	
<b>Port de la Flotte</b> One fixed bright lt.	46 11.3 1 19.4	Circular turret, 28 ft. high, on the new mole. Lifeboat station .....	4a	30	9	1849	
<b>Chauveau Point</b> One fixed bright lt.	46 8. 1 16.5	Circular tower, 75 ft. high, on S.E. point of island. Red sector over all rocks on South side of island .....	3a	59	14	1842	

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Rochelle Harbour One br., one red fix. lt.	46° 9.4' I 9.3'	Upper br. lt. on tower, 72 ft. high, on E. quay; lower lt. red, on circular turret, 44 ft high; 257 yds. to W. of S. In one, they lead in ... Fog-bell on Richelieu embankment	5a ●	59 46	10 9	1852 1862
ILE d'Aix One fixed bright light	46° 0.6' I 10.8'	Tower, 45 ft. high, on fort at S. point of island	4a	66	10	....
Fouras One fixed bright light	45° 59.8' I 6.	Basque Road. Iron pillar on end of pier, N. harbour .....	..	21	7	1876
Charente River 1. One red, one green fixed light 2. Two red fixed lights	45° 58. I 4.4'	1. Red & green lts. in one, S.E., 756 yds. apart, shown only toward the Rade Ile D'Aix ... 2. White towers, 536 yds. apart; lts. vis. toward the Port des Barques, from S. by E. & E. to S.E. by S. In one, lead to anchorage .....	a ● ●	45 25 44	10 9	1869 1869
Sendre River One fixed bright light	45° 47.8' I 8.7'	From lanterns on Pointe de Mua de Loup, entr. of river. Vis. betw. S.E. & S. & N.N.W. & W.	..	22	8	1876
ILE D'OLERON One fixed bright light	46° 2.8' I 24.7'	Chassiron Tower, 141 ft. high, on N.W. point of island. A refuge beacon on Antioch Rock, at 1½ mile to N.E. ....	1a	164	18	1836
La Pérotine Chateau Port Two fixed bright lts.	45° 58.2' I 53.1' I 11.7'	One fixed bright light at end of jetty ..... One on citadel wall; the other 262 yards to N.E. & N. When in one, lead in .....	● 4a	38 33 77	4 8	1859 1862 .....
<b>RIVER GIRONDE</b>						
CORDOUAN One rev. br. lt., 1 m.	45° 35.2' I 10.5'	A handsome structure, 207 ft. high, on rock. Lt. red between N. by E. & E. to E. by S. ...	1b	194	27	1727 1854
COUBRE POINT One fixed bright lt.	45° 41.5' I 15.4'	White tower, 100 ft. high, on N. point of river, N. point of entrance .....	3a	121	15	1860
Gironde River Lt.-Ves. Two bright fixed lts.	45° 39.9' I 15.8'	Inside Grand Banc, in 8 fathoms, S.E. of La Mauvaise Shoal .....	● ..	34 23	10 ..	1870 .....
Pte. de la Palmyre One alternating red & green lt., 20 secs.	45° 40.9' I 8.6'	On a tripod, 99 ft. high, on the dunes, 4½ miles S.E. by E. & E. from Pte. de la Coubre lt... Lts. only shown in that bearing .....	..	167	14	1870
Terre Negre One green light	45° 38.8' I 6.5'	Circular tower, 76 ft. high; not visible seaward, or to S. of W.S.W. and E.S.E. ....	3a	121	12	1865
Royan Two fixed red lights Bright jetty light	45° 37.3' I 2.8'	One on black tower, at Chay, W. of Royan; the other, painted in red and white bands, at St. Pierre, to the N. of Royan. In one, bearing N.E. by E. & E., lead into the river. Lts. only shown in that bearing .....	..	88 177	10 12	1873
St. George Two fixed red lights	45° 36. I 0.6'	One on Vallière Point; one on Susac sand-hills, at 2,734 yards E.S.E. & E., true, from former; on E. bank of river .....	3a	46	14	1860
St. Nicolas One fixed green light	45° 33.7' I 5.	On the Dunes, W. & S. from Pte. de Grave lt. Shown only to W. & S. In one with Pte. de Grave lt. leads through S. channel .....	..	121	18	1870
Pte. De Grave One flash. lt., 5 secs.	45° 34.2' I 4.1'	Square tower, 82 ft. high, on S. point of entrance .....	3a	85	14	1828 1865
Tallais Bank Lt.-Ves. One fixed bright lt.	45° 30.7' I 59.2'	In 2½ fathoms, on N.W. side of bank. Fog-bell 5 strokes ev. half hour .....	●	35	9	1845
Richard One fixed red light	45° 26.4' I 56.	Circular turret, 53 ft. high, on S.W. side of river .....	3a	105	14	1845
Tour de By Lightvessel One fixed bright lt.	45° 27.7' I 45.3'	In 2½ fathoms, on W. bank of river, opposite the tower .....	●	33	10	1860
Mapon Lightvessel One fixed bright lt.	45° 17.6' I 45.9'	In 3½ fathoms, on W. bank of river .....	●	33	10	1860
Lazaret	.....	One bright fixed light .....	Digitized by Google	23	5	1860

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year Established
<b>RIVER GIRONDE—(continued).</b>						
Gaet Fixed bright & red lt.	45 12.3 0 44.9	White iron beacon, 20 ft. high. The light is red to eastward .....	4a	20	6	1858
Ile de Patiras One bright flashing lt.	45 12.4 0 42.	Wooden scaffold, 43 ft. high, on N. end. It. flashes every 4 seconds.....	●	43	12	1860
Trompeloup	.....	Fixed light, on old chapel, on W. bank .....	...	...	...	1860
Pauillac	45 11.9 0 44.8	1. On landing-place .....	...	...	...	....
1. One br. fixed lt. 2. One br. or red fix. lt.	2. E. of Mousset, and N. of Gaet; red toward Gaet .....					
St. Lambert One red fixed light	45 11.3 0 44.2	Tower, 39 ft. high .....	..	52	8	....
Blaye One red, one br. lt.	45 7.4 0 40.1	Red lt. at entrance of harbour. Bright lt. at landing-place. Yellow lt. at end of discharging-place .....	..	...	...	....
MOURTINS	45 8.3 1 9.9	Square towers, each 77 ft. high, S. & W., 656 ft. apart, parallel with the coast .....	1a	177	20	1863
Two fixed bright lights			..	177	..	....
ARCACHON BASIN	44 38.7	Circular brick tower, 156 ft. high, on Ferret Cape, N. side of entrance. Lifeboat station .....	1a	167	18	1840
One fixed bright light	1 15.1					
CONTIS	44 5.7	Round tower, 125 ft. high, on sand hills, midway between Arcachon and Adour River ...	1b	164	20	1863
One br. rev. lt., $\frac{1}{2}$ min.	1 19.4					
Port Cap Breton	43 39.3	On a wall on left bank of entrance .....	..	26	5	1872
One fixed red light	1 27.					
Adour River	43 31.8	On signal tower, 45 ft. high, on S. jetty. It. is bright when entrance is practicable, but red when caution is necessary. Two green leading lts. when vessels can enter .....	4a	38	6	1860
One fixed bright light	1 31.4					
Two green leading lts.						
BIARRITZ	43 29.6	Brick tower, 144 ft. high, on Point St. Martin. Lt. white and red alternately. Flag when practicable. Lifeboat station .....	1b	240	22	1861
One alternating lt., 20 s.	1 33.3					
Socoa Port	43 23.7	Square tower, 33 ft. high, on W. point of St. Jean de Luz Bay. A red ray of $17\frac{1}{2}$ ° shown to turning point of the two green leading lts. Lifeboat station .....	4a	115	10	1845
One fixed bright light	1 41.1					
St. Jean de Luz	43 23.6	One green lt. on stone tower, 46 ft. high, 491 yds. behind E. jetty; lt. shown 10° on each side of leading mark; a second green lt. on E. jetty. In one, lead up till Socoa red lt. appears .....	..	52	7	1872
Two fixed green lights	1 40.3					
Two fixed red lights	43 24.	Brick towers on Pointe St. Barbe, E. side of bay. In line, S.E. by E. & E., 411 yds. apart, lead into the bay, until the green lts. come in line .....	●	166	13	1874
	1 40.		●	95	13	....

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in miles.	Year established.
Cape Higuera	43 23.8	Lt. is temporarily exhibited on ruin of old lt.-	..	259	6	1855
One temporary fix. lt.	1 47.9	ho., W. side of Bidason R. Shown seaward betw. W. by N. & N. and E. by S. & S. Not shown from May 1 to Nov. 1 .....				1878
Passages Port	43 20.2	On Cape La Plata, near W. entrance .....	4a	486	14	1855
One fixed bright light	1 56.5					
SAN SEBASTIAN	43 19.5	White tower, 46 ft. high, on Mount Igueldo, W. side. Flash every 2 minutes .....	3d	431	15	1855
One fixed and flash lt.	2 0.4					
One fixed bright light		On summit of Santa Clara Island .....	6a	171	9	1864
Guetaria	43 19.1	Light blue tower, on N. hill of San Antonio Islet. Visible seaward from N.W. & W. to S.E. & E. (Doubtful light). .....	5a	295	10	1863
One fixed bright lt. (?)	2 13.1					
Sumaya	43 18.7	Triangular yellow tower, 60 ft. high, on Mount Atalaya. (Doubtful light). .....	5a	135	..	1870
Lequeitio	43 23.4	Tower, 48 ft. high, on Point Sta. Catalina.....	5a	148	10	1862
One bright fixed light	2 15.5					
MACHICHACO CAPE	43 27.3	Circular tower, 28 ft. high, on extremity of cape. Flash every 4 minutes .....	1d	260	18	1852
One fixed and flash. lt.	2 49.4					
Bilbao	43 22.6	Tower, 41 ft. high, on fort, on Point Galea, W. side of entrance. Also a lt. when vessels enter, on S.W. mole head .....	4a	380	16	1852
One fixed bright light	3 4					
Castro Urdiales	43 24.3	On Sta. Ana Castle. Bright lt., with red flash every 2 minutes .....	5d	181	7	1853
One fixed and flash. lt.	3 16.1					
Santona	43 28.2	1. Tower, 44 ft. high, on Pescador Point. Flash every 3 minutes .....	4c	126	12	1863
1. One fixed & flash. lt.	3 27.2	2. Tower on Caballo Point, E. part of mount. Shown from N. by E. to S. by W. & W. ....	..	85	10	1863
2. One fixed red light						
Santander	43 28.2	1. White tower, 61 ft. high, on Moura Island. Shown seaward from N. by E. to E. by S....	5a	141	12	1860
1. One bright fixed lt.	3 45.4	2. Red lt. on Capitanía.....	●	33	3	1863
2. One red fixed light		3. Brick tower, 45 ft. high, on Point Puerto, W. of entrance. Lt. is bright over Horadada Inlet .....	5a	79	4	1870
CAPE MAYOR	43 29.5	Tower, 101 ft. high, on the cape, 1½ miles from entrance of Santander. A blue flag shown when tug cannot put off .....	2b	298	20	1839
One rev. br. lt., ev. m.	3 47.6					
Quances	43 26.8	At W. side of entrance to River San Martin de la Arena .....	6a	118	10	1863
One fixed bright light	4 0.9					
San Vincente de la Barquera	43 23.5	White stone tower on Point de la Silla, at entrance of harbour .....	6a	142	9	1871
One fixed red light	4 25.8					
Comillas	.....	Two towers for fixed lts. building on the cliff  ..   ..   ..   ....				
TINA MAYOR	43 25.2	White tower, 38 ft. high, on Point San Emeterio, rio, 1½ mile W. of entrance.....	3a	223	15	1864
One bright fixed light	4 33.6					
Llanes River	43 26.7	Tower, 26 ft. high, on Point San Antonio, S. side of entrance .....	6a	64	9	1861
One fixed bright light	4 45.5					
Rivadesella	43 31.	Tower, 25 ft. high, on Mount Somos. Lt. fixed, with flash every 4 minutes.....	3c	370	17	1861
One fixed & flashing lt.	5 7.1					
Villaviciosa	43 35.2	Yellow tower, 36 ft. high, on Taxones Point, W. side of entrance .....	1	220	7	1864
One fixed bright light	5 22.9					

Name and Character of Light.	Lat. N. Long. W. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Gijon 1. One fixed light 2. One fixed red light	43 35.2 5 38.	1. Tower, 30 ft. high, near Sta. Catalina Hermitage ..... 2. At end of new mole; also a red lt. at N. mole of basin .....	4a 4a	167 29	10 7	1865 1866
PENAS CAPE One rev. br. lt., $\frac{1}{2}$ min.	43 42.3 5 49.8	Tower, 33 ft. high, on the cape.....	1b	338	21	1853
Aviles One fixed bright light	43 38.1 5 36.4	Yellow tower, 49 ft. high, on Castillo Point, N. side of entrance .....	6a	130	10	1863
Cudillero One fixed bright light	43 36.2 6 9.1	Tower, 25 ft. high, on Revallers Point .....	5a	94	10	1858
CAPE BUSTO One fixed & flashing lt.	43 36.2 6 28.8	Tower, 34 ft. high, on the extremity of the cape. Lt. bright, with red flash every 2 min.	3d	307	12	1858
Luarca One fixed light	43 34.5 6 32.9	Square tower, 30 ft. high, on Point La Blanca, or Atalaya, on E. side .....	6a	177	7	1862
ORRIO DE TAPIA ID. One fixed & flashing lt.	43 35.7 6 58.4	Octagonal tower, 32 ft. high, on the summit of the islet. Flash every 2 minutes.....	3d	93	15	1859
Pancha Island One fixed bright light	43 34.7 7 4.4	On house, on W. point of entrance of Ribadeo and Figueiras.....	5a	79	9	1859
San Ciprian Peninsula One bright fixed light	43 13. 7 28.5	On house, on Punta de Atalaya, N. extreme of peninsula.....	6a	121	9	1864
Barquero Harbour One bright fixed light	43 45.6 7 40.3	Tower, 24 ft. high, on Conejera Island, on E. side of entrance .....	6a	273	12	1864
CAPE ESTACA One rev. br. lt., 1 min.	43 47.3 7 44.3	Granite tower, 35 ft. high, on the cape .....	1b	307	20	1850
Port Cedeira One fixed bright light	43 39. 8 5.4	On point of Robaleira Peninsula, S.W. of town .....	6a	88	9	1862
CAPE PRIOR One fixed bright light	43 33.7 8 19.1	On N. point of Cape Palma .....	3a	448	15	1854
Cape Priorino One fixed and flash. lt.	43 27.8 8 20.6	On Chico Priorino, entrance to Ferrol. Light bright fixed, with red flash every 3 min. ....	4d	92	11	1864
Ferrol One red, one bright lt.	43 28.7 8 15.5	Fixed red lt. near La Palma Castle. Bright light on Mercantile Wharf .....	5a ..	38 23	8 4	1862 1865
CORUNA One fixed and flash. lt.	43 23.3 8 24.1	On tower of Hercules; quadrangular, 139 feet high. Light fixed, with flash every 3 min.	3d	331	16	1847
Coruna	.....	Fixed lt. on St. Antonio Castle. A fixed red lt. on embarkation mole .....	..	..	..	....
SISARGAS ISLANDS One fixed and flash. lt.	43 21.8 8 50.2	Tower on Isla Mayor, N. peak. Fixed bright light, with red flash every 4 minutes .....	4d	358	11	1853
Cape Villanos One fixed bright light	43 9.8 9 12.9	At Camarinias, $2\frac{1}{2}$ miles northward of Camarinias Bay. Obscured by cliff from S. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E. ....	4a	243	10	1854
CAPE FINISTERRE One rev. br. lt., $\frac{1}{2}$ min.	42 52.7 9 15.4	Tower, 56 ft. high, on S. point of the cape. Obscured by land N. of N. $\frac{1}{2}$ W. ....	1b	468	20	1853

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Cape Ce One red fixed light	42 54.8 9 10.1	Grey tower on cape, W. of Corcubion Bay ...	5a	82	8	1860
Monte Loure One bright fixed light	42 44.3 9 3.8	On Point Quijral, N. entrance of Muros Bay	5a	89	10	1862
CAPE CORROREDO One fixed bright light	42 34.6 9 4.8	Tower, 41 ft. high, on the cape.....	3a	103	12	1853
Salvora Island One fixed and flash. lt.	42 27.8 9 0.4	South point. Lt. bright, with red flash every 2 minutes .....	4d	82	10	1853
Rua Island One bright fixed light	42 32.8 8 55.4	Grey tower, 53 ft. high, on island.....	5a	78	11	1869
Area Island One fixed bright light	42 34.1 8 52.	On the N.W., or Caballe Point .....	4a	36	10	1851
Ons Island One fixed and flash. lt.	42 22.5 8 55.7	Tower, 35 ft. high, on the summit of the island in Pontevedra Bay. Flash every 2 min. ...	5a	421	12	1865
BAYONA or CIES ISDS. One rev. br. lt. $\frac{1}{2}$ min.	42 12.4 8 54.1	Tower, 35 ft. high, on Mount Faro, Middle Island .....	2b	604	20	1853
Vigo One fixed & flash. lt.	42 15.3 8 41.	On castle of La Guia, 1 $\frac{1}{2}$ mile N.E. of Vigo. Flash every 3 minutes .....	4d	102	10	1844
Guardia Port	.....	Light proposed .....	..	..	..	....
Boeiro Island	.....	Light proposed .....	..	..	..	....
CAPE SILLEIRO One fixed bright light	42 6.1 8 52.6	Granite tower, 34 ft. high, on extremity of S. point of Vigo Bay.....	4a	72	17	1862

Name and Character of Light.	Lat. N. Long. W. • ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>PORtUGAL.</b>						
Lima River One fixed red light	41 41.3 8 44.	From Fort Vianna, N. bastion, N. side of river entrance .....	a	48	7	1878
Esposende River One red fixed light	41 31.4 8 40.5	Iron column on platform of old fort .....	a	..	7	1866
Povoa de Varzim	41 24. 8 37.	Fishing lts., 15 miles N. of Oporto .....	..	..	..	1857
<b>OPORTO</b>						
One rev. br. lt., 1 min.	41 9.1 8 37.2	Square tower, white with red band, at Nossa Senhora da Luz. Tide signals .....	4b	170	15	1834
Aveiro Proposed light	40 39. 8 43.	Proposed; on the pier, S. side .....	..	..	..	...
<b>CAPE MONDEGO</b>						
One fixed bright light	40 12. 8 55.2	A circular tower on the S. extremity of the cape; shown westward from N. to S. ....	●	330	20	1837
BERLENGAS One rev. br. lt., 3 min.	39 25. 9 31.3	Square tower, 100 ft. high, on Great Berlenga Island .....	●	365	25	1848
<b>CAPE CARVOEIRO</b>						
One fixed bright light	39 21.1 9 24.3	Square tower, 94 ft. high, on highest part.....	●	182	15	1790
<b>CAPE ROCA</b>						
One rev. br. lt., 1 $\frac{1}{2}$ min.	38 46.1 9 30.	Round tower, 52 ft. high, $\frac{1}{4}$ mile N.E. of the cape .....	●	598	21	1722
<b>RIVER TAGUS</b>						
Guia One fixed bright lt.	38 41. 9 27.2	Hexagonal tower, 96 ft. high, at Nossa Senhora da Guia. Signals.....	4a	167	12	1771
Cascaes One red fixed light	38 41. 9 26.	Square tower, with blue band, on S.E. angle of Sta. Marta Fort.....	a	52	5	1868
San Julian One fixed bright lt.	38 40.3 9 20.5	Hexagonal tower, 120 ft. high, in the fort.....	4a	128	13	1775
BUGIO One rev. br. lt., 1 $\frac{1}{2}$ m.	38 39. 9 18.6	Tower of Lorenzo, 70 ft. high. Reported to revolve every $\frac{3}{4}$ minutes (1876).....	●	110	16	1775
Caxias Two fixed red leading lights	38 41.9 9 13.8	At $\frac{2}{3}$ miles W. of Belem Castle. In line, N.E. by E. $\frac{1}{2}$ E., lead over bar until Bugi lt. bears S., when steer in mid-channel E. by S. to a position 4 cables S. of Belem Castle.....	..	240	18	1878
Belem One fixed red light	38 40.8 9 17.9	In fort, near Belem Castle .....	●	30	6	1847
CAPE ESPICHEL	38 24.1	Square tower, 100 ft. high, on the cape .....	1a	627	25	1790
One fixed bright light	9 13.					1848
Setuval, or St. Ubes One fixed bright light	38 31.1 8 53.	Circular tower, 36 ft. high, on Fort d'Outao, at W. entrance of harbour .....	●	490	16	1775
CAPE ST. VINCENT One rev. br. lt., 2 min.	37 3. 9 0.	Circular tower, 52 ft. high, on the Convent, Cape San Vicente. Rep. ev. 1 $\frac{1}{2}$ min. Lt. obscured by high land to the eastward .....	●	220	20	1846
CAPE SANTA MARIA One fixed bright light	36 56.2 7 55.	Circular tower on the cape .....	●	109	15	1850

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>GUADIANA RIVER</b> Two red fixed lights	37 11.4 7 24.3	On W. end of Canela Island; on E. side of Ayamonte River. In one, they lead over the bar .....	22½ 21	8 ..	1861	
<b>Cristina Island</b> Two green lights	37 11.1 7 20.5	On the point S. of the town. In one, they lead over the bar .....	26 16	7 ..	1861	
<b>Las Piedras River</b> One fixed & flash. lt.	37 11.8 7 1.1	White tower, 36 ft. high, at Rompido de Cartaya, at entrance of river. Fixed light, with flash every 4 minutes .....	3c	79 14	1861	
<b>Cartaya Bar</b> Two bright fixed lts.	.....	On white beacons, 328 yds. apart. In one, they lead across the bar .....	18 13	.. ..	....	
<b>Odiel River</b> Two fixed bright lights	37 13.4 6 51.6	On Punta del Padre Santo, on E. shore, 1½ miles within the bar of river leading to Huelva. In line, they lead in best channel	27 16	8 ..	1861 ....	
<b>GUADALQUIVIR RIVER</b>						
<b>CHIPIONA</b> One br. rev. lt., 1 m.	36 44. 6 26.8	Yellowish-white tower, 205 ft. high, on the Cerro del Perro. The Salmedina Shoal lies 1½ miles W. by N. of it .....	1b	225 23	1855	
<b>Espirito Santo</b> One fixed red light	.....	S. of the fort. La Riza Spit extends 1 mile N.N.E. of it. Not shown seaward .....	..	..	1854	
<b>Malandar Point</b> One fixed bright lt.	36 47.6 6 21.9	Tower, 30 ft. high, on the low point, opposite San Luar de Barrameda .....	..	36 6	1854	
<b>Bonanza</b>	.....	Fixed bright light, near the quay .....	5a	52 7	1854	
<b>CADIZ</b> One fixed lt., with flash.	36 31.5 6 19.4	White tower of San Sebastian, 127 ft. high, on W. end of Cadiz. Bright lt., with red flash every 3 minutes .....	2b	146 20	1855	
<b>CAPE TRAFALGAR</b> One rev. lt., ½ min.	36 10.9 6 1.3	Tower, 116 ft. high, on extreme of the cape, at 1½ miles S.W. by W. true from the tower on Altos de Meca .....	2a	168 19	1862	
<b>TARIFA</b> One fixed red lt.	35 59.9 5 36.6	Circular tower, 112 ft. high, on S. end of peninsula. Shaded ½ a mile S. of Pearl Rock .....	1a	132 20	1813 1870	
<b>Carnero Point</b> One fixed green light	36 4.5 5 25.8	Round yellow tower, 163 ft. high. Lt. shows to S. and E. betw. N. ½ E. & S.W. by W. ½ W. .....	5a	135 11	1874	
<b>Algeciras</b> One fixed bright light	36 7.3 5 26.1	White tower, 29 ft. high, on mole end of Verde Island, on fort. Shown over entrance of bay, from S.E. by E. ½ E. to S. by W. .....	6a	62 9	1850 1864	
<b>GIBRALTAR</b>						
<b>EUROPA POINT</b> One fixed bright lt.	36 6.5 5 21.	On Victoria Tower, 61 feet high. A sector of red light over the Pearl Rock, from S.W. by W. ½ W. to W. ½ S. .....	1a	156 15	1840	
<b>New Mole</b>	36 7.3	Stone column, 32 ft. high, near end. Red lt. temporary .....	4a	28 8	1867	
<b>Ragged Staff Landing-place</b>	.....	One green gas light .....	..	..	....	
<b>North or Old Mole Head</b>	.....	Fixed red light .....	..	..	1840	
<b>MAROCCO.</b>						
<b>CAPE SPARTEL</b> One fixed bright light	35 47.2 5 55.7	Stone tower, 79 ft. high, ½ a mile E. of the cape, at S.W. of entrance to Gibraltar Straits .....	1a	312 20	1864	
<b>CEUTA</b> One rev. bright light	35 53.7 5 17.5	Tower, 88 ft. high, on Mosqueros Hill, Almina Point. Flash every minute or ½ min .....	1b	587 23	1856	

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Mile.	Year established
<b>EUROPA POINT</b> One fixed bright light	36 6.5 5 21.	On Victoria Tower, 61 ft. high. Red ray shown over Pearl Rock, from S. W. by W. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ S. ....	1a   156   15	1840		
						1866
<b>Estepona</b> (One fixed and flash. lt.)	36 24.2 5 9.6	On Doncella Point. Flash every 4 minutes ...	4c   59   12	1863		
<b>Marbella</b> 1. One fixed bright lt. 2. One fixed red light	36 31. 4 54.3	1. Grey tower, 39 ft. high, W. of town ..... 2. On extremity of new iron mole .....	5a   55   12 ..   30   8	1864 1872		
<b>Calaburra Point</b> One fixed and flash. lt.	36 30.7 4 38.	Grey tower, 44 ft. high, S. of the town. Flash every 3 minutes .....	3c   115   16	1863		
<b>MALAGA</b> One fixed and flash. lt.	36 42.6 4 25.8	White tower, 105 ft. high, near E. mole head. Red flash every 2 minutes .....	3d   125   15	1863		
<b>Velez-Malaga</b> One fixed bright light	36 44. 4 9.3	Grey tower, 36 ft. high, E. side of entrance to river .....	5a   41   11	1864		
<b>Nerja Building</b>	36 45. 3 55.	Tower, 77 ft. high, building .....	3a   94   ..	....		
<b>Torrox</b> One bright fixed light	36 45.2 3 59.4	Grey stone tower, 77 ft. high, on castle ruins .....	3a   93   15	1864		
<b>CAPE SACRATIF</b> One rev. br. lt., 1 min.	36 41. 3 28.9	Red brick tower, 56 ft. high, on a hill at the extremity of the cape .....	2b   320   24	1863		
<b>Honda Cove</b> One fixed red light	36 41. 3 25.9	Tower, 34 ft. high, on Pta. del Llano de Carchuna, on W. point of entrance .....	5a   44   8	1863		
<b>ALBORAN ISLAND</b> One fixed bright light	33 58. 3 1.	Yellow tower, 62 ft. high, rising from centre of keeper's dwelling .....	..   115   15	1876		
<b>Adra Point Building</b>	36 44. 3 2.1	Building .....	6a   ..   ..	....		
<b>SABINAL POINT</b> One fixed and flash. lt.	36 41.3 2 44.	White tower, 103 ft. high. Flash every 2 min. ....	3c   105   18	1863		
<b>Roquetas</b> One fixed bright light	36 45.2 2 41.8	White tower, 36 ft. high, S. of town .....	6a   57   11	1863		
<b>Almeria</b> One fixed bright light	36 50.7 2 33.3	On extreme of mole. Shown from river mouth to S. Teleno Fort .....	6a   26   9	1865		
<b>CABO DE GATA</b> One br. rev. lt., $\frac{1}{2}$ min.	36 43.6 2 14.2	White tower, 60 ft. high, on Corraletes Castle .....	2b   194   19	1863		
<b>MESA DE ROLDAN</b> One fixed and flash. lt.	36 54.7 2 58.3	White tower, 39 ft. high, on the mount. Flash every 2 minutes .....	3c   725   22	1863		
<b>Villaricos</b> One fixed bright light	37 11.3 1 52.8	White tower, 30 ft. high, $1\frac{1}{2}$ mile N. of the River Almanzora .....	5a   63   9	1842		
<b>Puerto de Aguillas</b> One fixed bright light	37 23.5 1 39.4	On Punta Negra, W. part of Mount Aguillas .....	6a   48   5	1860		
<b>Puerto de Mazarron</b> One fixed bright light	37 33.2 1 17.3	Grey tower, 23 ft. high, on a small hill S. of the port .....	6a   200   7	1862		
<b>TINOSO CAPE</b> One fixed bright light	37 31.3 1 8.9	Red round tower, 34 ft. high, on square building on the cape .....	1a   479   20	1859		

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Cartagena</b>						
1. One fixed bright lt.	37 35.7	1. In battery, on Point Podadera.....	4a	200	19	1856
2. One fixed <i>red</i> light	o 58.4	2. On summit of Escobrera Id., at entrance	6a	223	5	1864
3. One fixed <i>red</i> light		3. On wooden frame, 33 yards from end of breakwater, at W. side of entrance. In bad weather, moved back 131 yards .....				
<b>Puerto de Forman</b>	37 34.2	Yellow tower, 27 ft. high, on hill over Chapa	5a	162	9	1865
One fixed bright light	o 49.5	Point, S.E. extreme of entrance .....				
<b>CAPE PALOS</b>	37 37.5	Grey tower, 165 ft. high. Light revolves every	1b	263	21	1865
One bright revolving lt.	o 39.9	minute .....				
<b>Hormiga Grande</b>	37 38.5	White tower, 41 ft. high, on largest islet, 2½	5a	75	12	1862
One fixed bright light	o 38.1	miles N.E. by N. true from Cape Palos .....				
<b>Estacio</b>	37 45.	On beach La Manga, at 7½ miles N. by W.	6a	62	6	1862
One <i>red</i> fixed light	o 42.6	from Hormiga Grande .....				
<b>Torrevieja</b>	37 58.1	On fort, on Pta. Cornuda, near Cervera. Will	..	33	4	1862
One fixed <i>red</i> light	o 39.9	be moved as the mole advances.....				
<b>PLANA, or TABARCA ISLAND</b>	38 10.2	White tower, 40 ft. high, at ½ mile from East	3d	90	15	1854
One fixed and flash, lt.	o 26.6	point of island. Br. flash every 2 min. ....				
<b>Santa Pola</b>	38 12.5	One on Talayola Tower, 47 ft. high, ½ mile from	6a	499	7	1858
Two fixed bright lights	o 30.1	sea, and the other r.m. an iron column on the mole in S.a. Pol. Bay .....	..	16	..	1878
<b>Alicante</b>	38 20.3	Red lt. on rocks off N. mole head. Green lt.	..	26	2	1855
One <i>red</i> , one <i>green</i> light	o 28.7	on end of W. mole.....				
<b>Huertas Cape</b>	38 21.	Tower, 27 ft. high, on house on the cape .....	4a	123	12	1856
One fixed bright light	o 22.6					
<b>Villa-joyosa</b>	38 30.	White building, 40 ft. high. Shown all round,	6a	52	10	1859
One fixed bright light	o 11.6	on the mole .....				
<b>Altea</b>	38 33.5	Round white tower, 26 ft. high, on Albir Point	5a	367	9	1863
One fixed bright light	o 3.9					
<b>CAPE SAN ANTONIO</b>	38 48.5	A white tower, 52 ft. high .....	2b	571	25	1861
One rev. br. lt., ½ min.	Long. E. o 12.					
<b>Denia</b>	38 51.5	Light proposed .....	..	..	..	....
<i>Proposed</i>	o 7.5					
<b>CULLERA CAPE</b>	39 12.3	Circular tower, 44 ft. high, on the cape. Shown	3a	92	15	1858
One fixed bright light	Long. W. o 13.5	seaward from S. to N.N.W. ....				
<b>Grao de Valencia</b>	39 26.8	At extremity of new mole (constructing) .....	6a	28	9	1866
One fixed <i>red</i> light	o 19.1					
<b>El Cabanal</b>	39 28.1	On S. tower of Hermitage, 54 ft. high .....	6a	66	9	1862
One fixed bright light	o 19.7					
<b>Burriana</b>	39 53.3	At the Grao, near the mouth of the River Seco	6a	26	9	1867
One fixed <i>red</i> light	o 3.8	.....				
<b>Castellon de la Plana</b>	39 58.7	At the Grao, in the Gulf of Valencia .....	6a	26	9	1867
One bright fixed light	o 0.2					

Name and Character of Light.	Lat. N. Long. E. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus		Height above H. W.	Visible in Miles.	Year established.
			Height above H. W.	Visible in Miles.			
<b>OROPESA CAPE</b> One fixed and flash. lt.	40 49. o 9.	White tower, 41 ft. high, on the cape. Flash every 3 minutes .....	3d	73	15	1857	
<b>Vinaroz</b> One red fixed light	40 29.3 o 28.2	On an iron frame, on La Galera Rock.....	6a	26	6	1862	
<b>COLUMBRETES ROCKS</b> One fixed bright light	39 54. o 44.4	Square white building, 69 ft. high, on N.E. part of Monte Colibre .....	1a	190	21	1859	

**BALEARIC ISLANDS.**

<b>FORMENTERA ISLAND</b> One fixed bright light	38 38.2 i 39.4	White tower, 70 ft. high, on Codolar, or S.E. point .....	2a	580	18	1861
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**IVIZA ISLAND**

<b>CONEIERA ISLAND</b> One rev. br. lt., 1 m.	38 59.8 i 16.5	White tower, 54 ft. high, on Cape Blanco. Lt. shown from N.E. by E. $\frac{1}{2}$ E. to S.S.W. $\frac{1}{2}$ W.	2b	289	20	1857
<b>Point Grossa</b> One intermitting lt.	39 5. i 36.9	Grey tower, 50 ft. high, on N.E. point of Iviza; eclipsed every 4 minutes .....	3a	180	15	1870
<b>Ahorcados Island</b> One fixed bright lt.	38 48.7 i 28.8	Tower, 56 ft. high, on S. extreme of Iviza ...	4a	92	16	1861
<b>Puercos Islet</b> One fixed & flash. lt.	38 48. i 29.4	Grey tower, 84 ft. high, on N.W. part of Es-palmador, S. of Ahorcados; red flash every 3 minutes .....	4c	94	15	1864
<b>Botafoch Island</b> One fixed bright lt.	38 54. i 31.	Red tower, 53 ft. high, on inlet, N. side of entrance to port .....	6a	102	9	1861
<b>DRAGONERA ISLET</b> One fixed and flash. lt.	39 35. 2 21.2	On the central peak (Single de Ginavera) of the islet, at W. end of Majorca. Flash every 2 minutes, which may be seen sometimes at 36 or 40 miles off ...	3c	1191	18	1852

**MAJORCA ISLAND**

<b>Cala Figuera</b> One fixed bright lt.	39 27.7 2 33.9	Yellow tower, 45 ft. high, on the cape, W. side of entrance to Palma Bay .....	5a	116	12	1860
<b>Port Pi</b> One rev. br. lt., 2 m.	39 33. 2 40.4	White tower, 100 feet high, on S. side of entrance to Palma Bay.....	..	132	8	....
<b>Palma Port</b> One fixed red light	39 34. 2 40.9	On the end of the mole.....	●	37	4	....
<b>Cape Blanco</b> One fixed bright lt.	39 22. 2 49.9	Square tower, 38 ft. high, on S.W. coast .....	6a	294	10	1863
<b>Salinas Point</b> One fixed bright lt.	39 16.5 3 5.9	Grey tower, 33 ft. high, on S. point of Majorca	6a	50	10	1863
<b>CABRERA ISLAND</b> One intermitting lt.	39 6.8 2 58.2	Square yellow tower, 81 ft. high, on Aciola or S.W. point of island, off Cape Salinas. Lt. bright $\frac{1}{2}$ min., eclipsed $\frac{1}{2}$ min.....	2b	404	20	1870
<b>Puerto Colom</b> One fixed bright lt.	39 25. 3 18.4	On N.E. point of entrance; on S.E. coast of Majorca.....	6a	46	10	1863

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H.W.	Visible in Miles.	Year established.
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**MAJORCA—(continued).**

<b>CAPE PERA</b> One fixed & flash. lt.	39 43. 3 30.	Grey tower, 55 ft. high, on E. point of Majorca. Fixed, with red flash every 2 minutes.....	3c   241   18   1861
<b>CAPE FORMENTON</b> One rev. br. lt., $\frac{1}{2}$ m.	39 57.6 3 14.9	Grey tower, 70 ft. high, on N. point of Majorca	2a   592   20   1863
<b>Aucanada</b> One fixed bright lt.	39 49.8 3 12.4	White tower, 46 ft. high, on the summit of the islet in Alcudia Bay .....	6a   77   9   1861
<b>SOLLER PORT</b> 1. One fixed br. lt. 2. One fixed br. lt.	39 48.1 2 43.6	1. White tower, 62 ft. high, with red band, on Grosa Point, W. entrance .....	4a   467   15   1858
		2. Grey tower, 40 ft. high, on Cruz or E. point .....	6a   77   12   1864

**MINORCA ISLAND**

<b>Ciudadela</b> One fixed bright lt.	39 59.8 3 52.2	Grey tower, 36 ft. high, on Pta. Enderrocat, at W. end of Minorca .....	6a   66   7   1868
<b>CABALLERIA CAPE</b> One fixed bright lt.	40 5.7 4 9.3	White tower, 47 ft. high, on N. cape of Mi- norca .....	2a   308   18   1857
<b>Port Mahon</b> One fixed bright lt.	39 52. 4 24.2	On ruins of Fort San Felipe, on the S.E. side of the entrance .....	6a   74   7   1852
<b>AYRE ISLAND</b> One rev. br. lt., 1 m.	39 47.6 4 22.9	Yellow tower, 118 feet high, on S.E. part .....	2b   171   20   1860
<b>DAETUCH</b> One fixed & flash. lt.	39 54.8 3 52.1	White tower, 50 ft. high, on S.W. point of Minorca. Flash every 3 minutes.....	4d   70   16   1859

**EBRO RIVER**

<b>Port Alfaques</b> One fixed red light	40 36.7 0 34.7	On Senieta Point, $\frac{1}{2}$ of a mile S. of S. Carlos de la Rapita .....	6a   30   6   1864
<b>Bana Point</b> One fixed bright lt.	40 34.5 0 39.1	Yellow iron tower, 61 ft. high, on the S. ex- treme of the Alfaques de Tortosa .....	3a   62   13   1864
<b>CAPE TORTOSA</b> One br. rev. lt., 1 m.	40 43.4 0 57.	Iron tower, 169 ft. high, on E. end of Buda Island. Must have a berth of 1 mile .....	2b   174   20   1864
<b>Port Fangal</b> One fixed bright lt.	40 47. 0 47.2	On Fango Point, N. point of the Alfaques.....	6a   25   9   1864
<b>CAPE SALOU</b> One fixed and flash. lt.	41 4.1 1 9.6	White tower, 33 ft. high, near the cape; flash every 4 minutes .....	3d   140   15   1828
<b>Salou</b> 1. One fix. bright lt. 2. One fixed green lt.	41 4.8 1 6.6	1. On S. mole (temporary); not lighted about the full moon; to be revolving light .....	..   27   6   1827
		2. On extr. of W. or inner mole, constructing	
<b>Tarragona</b> 1. One fixed red light 2. One fixed green light	41 7. 1 16.	1. On S. end of the mole (temporary); shifted as the works advance .....	..   54   10   1832
		2. On extr. of inner or transverse mole in course of construction, at $\frac{1}{2}$ cables N.N.E. $\frac{1}{2}$ E. from E. mole head lt. Obscured betw. N.W. by N. and N.W. $\frac{1}{2}$ W. .....	a   16   3   1878
<b>Villanueva and Geltru</b> One bright fixed light	41 14. 1 43.7	On San Cristobal Point, W. by N. $\frac{1}{2}$ N. true from Pta. Grossa .....	6a   40   11   1866

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LLOBREGAT RIVER</b> One rev. br. lt., $\frac{1}{2}$ min.	41 19.2 2 5.9	Tower, 102 ft. high, painted yellow with white bands, on an old fortress on N. side of entr.	2b	107	18	1852
<b>BARCELONA</b> One fixed and flash. lt. One red, one green lt.	41 22.2 2 10.9	Octagonal tower, 37 ft. high, on old mole head. Bright lt., with red flash every 4 min. Red lt. on W. mole head, green lt. on E. mole...	4d ●	43 33	9 4	1859 1866
<b>CALELLA</b> One fixed and flash. lt.	41 36.7 2 39.4	On the height of Torreta. Flash every 2 min. Also a small lt. on jetty in construction.....	3d	166	18	1859
<b>Palamos</b> 1. One bright fixed lt. 2. One fixed red light	41 50.1 3 8.5	1. On the mole head ..... 2. On Molino Point, E. side of entrance to bay	● 5a	33 74	8 10	1865
<b>CAPE SAN SEBASTIAN</b> One rev. br. lt., 1 min.	41 53.5 3 12.4	White tower, 38 ft. high, near the Hermitage	1b	548	22	1857
<b>ROSAS</b> One fixed and flash. lt.	42 14.7 3 10.9	White tower, 37 ft. high, with red bands, on Poncellas Point, E. side of bay. Red flash every 2 minutes .....	4c	78	12	1864
<b>ISLAS MEDAS</b> One bright fixed light	42 2.9 3 13.3	Reddish tower, 35 ft. high, on summit of the island, at S. extreme of Gulf of Roses.....	3a	283	15	1868
<b>Cadaques</b> One bright fixed light	42 16.2 3 17.3	On Cala Neu Point, S. side of entrance.....	6a	116	10	1864
<b>CREUX CAPE</b> One fixed & flash. br. lt.	42 18.7 3 19.3	White tower, 35 ft. high, $\frac{1}{2}$ mile in shore (re-pairing). A temporary red lt. is shown.....	3d	285	15	1853

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CAPE BEARN</b> One fixed bright light	43 31. 3 7.4	Round stone tower, 30 ft. high, on Mount Bearn, $\frac{1}{2}$ a mile S.S.E. of Port Vendres .....	1a	751	22	1836
<b>Port Vendres</b> One fixed bright light	43 31.3 3 6.7	White brick tower, 59 ft. high, in Fort Fanal, W. side of entrance .....	4a	98	10	1858
One bright, one red lt.	.....	On Fort Bearn. In one, N.E.; in N., 217 yards apart, they lead into the port .....	4a	36	7	1861
●	67	8	1858			
<b>Port Nouvelle</b> 1. One fixed bright lt. 2. One fixed bright lt.	43 0.8 3 3.9	1. On W. jetty head. Port signals. Lifeboat station ... 2. Temporary lt., on S. mole head, in progress. In line with No. 1 indicates S.E. extension of new mole. Not shown in bad weather when red lt. is shown below br. lt. on W. jetty. Entering, leave new mole on port hand	4a	33	10	1805 1878
<b>Agde</b> East and West Jetties	43 16.7	Bright lt. on E. jetty; red lt. on W. jetty.	●	41	10	1827
One br., one red lt.	3 26.9	Entrance of Hérault River .....	..	41	7	....
<b>Fort Brescou</b> One fixed bright lt.	43 15.5 3 29.9	Round tower, 28 ft. high, on S.E. bastion, 3 miles S.E. of River Hérault .....	4a	59	10	....
<b>MONT AGDE</b> One rev. br. lt. 1 m.	43 17.9 3 30.1	Round tower, 46 ft. high, $\frac{2}{3}$ miles E. & N. from River Hérault .....	1b	413	27	1836
<b>CETTE</b> 1. One bright fixed lt. 2. One red fixed light 3. One green fixed light	43 23.8 3 42.4	1. Round tower, 88 ft. high, on St. Louis mole head, W. side of entrance .....	3a	105	14	1831
Etang de Thau	43 26.1	2. Red light on N.E. end of breakwater .....	●	46	7	1831
One fixed bright light	3 40.3	3. Green light on end of Frontignan Jetty .....	..	44	7	1870
<b>L'ESPIGNETTE POINT</b> One bright fix. lt., with flashes	43 29.3 4 8.9	Tower, 60 ft. high. Lt. removed from Aigues Mortes. Flash every 4 minutes .....	3c	85	14	1869
<b>Grau d'Aguies Mortes</b>	.....	Bright lt. on S. jetty; fixed red lt. on N.W. jetty .....	4a	23	5	1858
<b>CAMARGUE, or FARA-MAN</b> One fixed bright light	43 20.7 4 40.8	Circular tower, 120 ft. high, E. side of mouth of Vieux Rhone .....	1a	125	18	....
One lower red light		Lower lt. at base of tower, to distinguish it from Planier Rock light .....	..	38	9	1868
<b>St. Louis Canal</b> One fixed bright light	43 23.4 4 52.2	New brown iron tower, 38 ft. high, on E. end of S. jetty. Lt. obscured over shoals at mouth of the Rhone .....	..	43	10	1872
<b>Boue</b> Two fixed bright lts.	43 23.6 4 59.1	Circular tower, 38 ft. high, on mole head, N. side of entrance; the other, a square tower, 84 ft. high, in fort, S. side. A sector of red lt. of 40° from the fort towards the approach to the Rhone River .....	4a	52	10	1840
<b>Cape Couronne</b> One rev. red lt., 20 secas.	43 19.5 5 3.1	Stone tower, 38 ft. high, on eastern point of Gulf de Foz .....	4a	98	10	1843
<b>Frioul Port</b> One red fixed light	43 16.7 5 18.6	Near the end of the East jetty .....	..	35	5	1871
<b>MARSEILLES</b> National Basin	.....	1. From lt.-ves. at N. entr. of Marseilles Harbour, marking works in progress off N. end of N. outer jetty. In all cases vessels must pass northward of the lightvessel .....	a	39	7	1869
1. Two fixed red lts. 2. Two fixed red lts. 3. Small red lights		2. Vertically, on N. buoy, marking works in progress, at N.E. angle of National Basin. Entering National Basin from northward, leave these lts. on port hand, and keep on W. side of a line joining them with E. pier lt. of Abattoir Passage, to avoid works in S.E. angle of basin .....	..	..	..	1877
		3. One on either side entr. to National Basin, and one on either side of Abattoir Passage, which leads from National Basin into Maritime Basin .....				
<b>Maritime Basin</b>	.....	Buoys and lights will be placed off works in Maritime Dock .....	..	..	..	....
<b>Old Basin</b>	43 17.9	1. At S. entr. of Marseilles Harb. Round tower, 70 ft. high, on iron pillars, on S. pt. of mole .....	4a	76	8	1855
1. One red light 2. Two small red lts.	5 21.4	2. One on either side of the entr. of the basin .....				
<b>Fort St. Jean</b>	43 17.7	White turret below Fort St. Jean, on N. side of the entrance to old basin .....	4a	39	10	1837
One bright fixed lt.	5 21.6					

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>MARSEILLE—(continued).</b>						
Tete de Mare	43 17.7	Fixed lt., with flash every 3 minutes, on S. side of entrance. Hidden to S.E. ....	4c	62	10	1837
One fixed & flash. lt.	5 21.4					
ile Chateau d'If	43 16.8	On the East point of the island. Lifeboat station .....	4a	69	10	....
One bright fixed lt.	5 18.6					
PLANIER ROCK	43 11.9	White tower, 118 ft. high, with a small tower near it .....	1b	131	20	1829
One rev. br. lt., $\frac{1}{2}$ min.	5 13.7					
Riou	.....	Light proposed at entrance to gulf .....	..	..	..	....
<i>Proposed</i> light						
Cassis	43 12.8	Small tower, 28 ft. high, W. side of entrance	4a	92	10	....
One fixed bright light	5 31.9					
Cictot	43 10.3	Bright lt. on Bérouard mole head, N. side of entrance; red lt. on new mole head.....	4a	39	10	....
One bright, one red lt.	5 36.6		4a	52	6	1858
Port Bandol	43 7.9	On extremity of the mole .....	..	32	5	1872
One fixed red light	5 45.3					
Grand Rouveau Les Ambiez	43 4.8	Square stone tower, 49 ft. high, on the summit of islet, S. side of entrance to Bay de St. Nazaire.....	3a	151	14	1863
One fixed bright light	5 46.					
SEPET CAPE	43 4.1	Square tower, 36 ft. high, on Rascas Point. Br. and red flash alternately every 3 min....	3c	194	12	1851
One fixed and flash. lt.	5 56.7					
TOULON ROAD	43 6.2	1. On Grosse Tower, 52 ft. high, on N. side of entrance to the Little Road.....	4a	52	10	1859
1. One fixed bright lt.	5 55.5	2. From lt.-ves., on S.W. extremity of l'Ane Bank. Lights horizontal, on one mast .....	..	..	3	1861
2. Two green lights		3. On W. pier of Old Harbour and N. pier of Merchant Port.....				
3. Two small red lights		4. From three lt.-vessels marking the extremities of piers in course of construction in Toulon Outer Road. Vessels entering should keep the green light on the starboard hand, and the red lts. on the port hand .....	..	..	..	1878
4. Two fixed red lts. & one fixed green light						
La Seyne	.....	Gas lt. on end of W. jetty; red to seaward; bright to land .....	..	..	..	....
One red or bright light						
Grand Ribaud Island	43 1.1	Square turret, 39 ft. high, on the summit of the island. In W. passage to Hyères Road	4a	112	10	1851
One fixed bright light	6 8.5					
Rade d'Hyères	43 7.	From lt.-ho. at end of E. pier at Vieux Salines d'Hyères .....	..	23	3	1878
One fixed green light	6 12.					
Point Blanche	43 5.3	In the battery, on the point, at N. entrance to Hyères Road .....	4a	171	5	1863
One red fixed light	6 21.7					
PORQUEROLLES ID.	42 59.	Square white tower, 56 ft. high, on S. point. Flash every 4 minutes .....	1d	202	20	1837
One fixed and flash. lt.	6 12.3					
LEVANT, or TITAN ID.	43 2.8	Square white tower, 89 feet high, on E. point	3a	246	15	1837
One fixed bright light	6 30.5					
CAMARAT CAPE	43 12.	Square white tower, 89 ft. high, on the Cape. Period of revolution double that of Planier Island Light .....	1b	426	27	1837
One rev. br. lt., 1 min.	6 40.4					
St. Tropez	43 16.4	Stone tower, 56 ft. high, on jetty, on N. side of port .....	4a	51	7	1857
One fixed red light	6 38.1					1869
Port St. Raphael	.....	Bright fixed light on jetty head .....	..	30	7	1873
Cannes	43 32.8	Round tower, 34 ft. high, on the mole, W. side of entrance .....	4a	49	10	1854
One fixed bright light	7 0.8					

Name and Character of Light.	Lat. N. Long. E. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Visible in Miles.	Year established.
<b>Ilette Point</b> One fixed br. or red lt.	43 32.6 7 7.2	On the S.E. point of the Gulf of Jouan. The lt. is bright from E. by S. & S. southward, to W. & N., thence red to W. by N. & N. over Formiques Rocks .....	..   34   9   1870 6		
<b>GAROUPE</b> One fixed bright light	43 33.8 7 7.9	Round tower, 79 ft. high, on Garoupe Peninsula, 1/4 mile S. by W. & W. of Antibes. Not seen from the south-westward till round Cape Gros .....	1a   338   20   1837		
<b>Antibes</b> One fixed & flash. lt.	43 35.1 7 7.6	Round tower, 49 ft. high, on S.E. mole head. Bright flash every 2 minutes .....	4c   49   10   1834		
<b>NICE</b> One fixed and flash. lt. One fixed green light One green, one red lt.	43 41.5 7 17. ..... ..... .....	Stone tower, 49 ft. high, on end of outer mole. Lt. bright, with red flash every 1/2 min. Not lighted when harbour is unapproachable ... On commencement of mole .....	4c   76   12   1855 ●   ..   2   1864		
One red light One red light	..... .....	Upper green, lower red light; on beach of Lazaretto .....	..   ..   ..   ..   ..   ..	1869 1867 1867	
<b>VILLA FRANCA POINT</b> One fixed and flash. lt.	43 40.5 7 19.6	Round tower, 110 ft. high, on Mala, or Cape Ferrat. Flash every 1/2 minute .....	2c   223   18   1838		
<b>Villa France</b> One fixed red light One fixed green lt.	..... .....	On terrace of Lazaretto .....	..   47   4   1867		
On extremity of mole .....	.....	On extremity of mole .....	..   21   4   ....		
<b>Port St. Jean</b> One fixed red light	43 41.4 7 20.	On the E. mole; in the Gulf of St. Ospizio ...	..   31   4   1867		
<hr/>					
<b>CORSICA.</b>					
<b>CAPE CORSE</b> One rev. br. lt., 1/2 min.	43 1.7 9 24.1	Tower, 72 ft. high, on North end of Giraglia Island .....	1b   269   22   1847		
<b>Fornali Point</b> One fixed green light	42 41.6 9 16.7	St. Florent Gulf. Tower 31 ft. high .....	..   46   5   ....		
<b>Mortella Point</b> One flashing light	42 43.2 9 15.3	Brick lt.-ho., 38 ft. high, on W. side of entr. to St. Florent Gulf. Lt. flashes every 4 secs...	c   140   14   1877		
<b>Port Rossa, or Rousse Id.</b> One fixed red light One fixed bright light	42 38.8 8 55.7	Red lt. on N.W. point of island. Bright lt. on Isola Rossa jetty head .....	4a   180   7   1857 4a   38   6   1858		
<b>PUNTA REVELLATA</b> One fixed bright light	42 35.2 8 43.3	Square tower, 52 ft. high, on extremity of Revellata Point .....	1b   269   23   1844		
<b>Calvi</b> One bright fixed lt.	.....	At the foot of the citadel .....	..   97   11   1867		
<b>SANGUINAIRE ISLAND</b> One fixed and flash. lt.	41 52.8 8 35.6	Square tower, 52 ft. high, on summit. Flash every 4 minutes .....	1c   322   20   1844		
<b>Ajaccio</b> One fixed bright light One fixed red light	41 55. 8 44.4	Circular tower, 36 ft. high, on angle of citadel. Also a green lt. on end of jetty .....	4a   62   10   1851 ..   24   5   ....		
<b>Port Propriano</b> One fixed red light	41 40.8 8 53.8	Brick tower on extr. of Scoglio Longo Pier. Lt. vis. northwd. betw. E. by N. & W. by S. A faint lt. also vis. over harbour ..	..   34   10   1878		
<b>Cape Feno</b> One fixed bright light	41 23.6 9 6.4	Square tower, 37 ft. high, on the cape, S.W. coast of Corsica. Shows over an arc of 30° over the Monache or Moines Rocks .....	..   65   13   1874		
<b>Bonifacio Port</b> One fixed bright light	41 23.3 9 8.6	Square tower, 36 ft. high, on Madonetta Point, on N. side of entrance .....	4a   98   10   1854		
<b>CAPE PERTUSATO</b> One rev. br. lt., 1 min.	42 22.2 9 11.1	Tower, 52 ft. high, 2 miles S.E. of Bonifacio Harbour, in the Strait of Bonifacio .....	1b   325   27   1844		

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year erected
<b>PORTO VECCHIO</b> One fixed and flash. lt.	41 35.7 9 22.	Square tower, 52 ft. high, on Chiape Point, S. side of the bay. Flash every 4 minutes.....	1d   217   20   1845			
<b>ALISTRO</b> One bright fixed light	42 15.7 9 32.5	Octagonal tower, 82 ft. high, on the heights of Alistro, N. of Ajaccio Point .....	1a   308   20   1864			
St. Nicholas One <i>red</i> fixed light	.....	Temporary light.....	•   ..   4   1868			
<b>Bastia</b> One fixed bright light	42 41.8	Circular tower, 36 ft. high, on Dragon bastion	4a   82   11   1864			
One <i>green</i> fixed light	9 26.9	On l'Eperon, new head of old mole .....	•   36   5   1863			
One <i>red</i> fixed light		On Dragon jetty.....	4a   36   5   1861			

**SARDINIA.**

<b>ASINARA ISLAND</b> One fixed bright light	41 7.6 8 17.3	Circular tower, 62 ft. high, on Caprara, or Scorno Cape, N. part of island. Shown seaward from W. by S. $\frac{1}{2}$ S. to S.S.E. $\frac{1}{2}$ E....	1a   262   24   1859			
<b>Port Torres</b> One fixed bright light	40 50.7 8 24.4	Tower, 38 ft. high, on E. mole head. Shown seaward from E. by S. $\frac{1}{2}$ S. to W. by N. $\frac{1}{2}$ N.	4a   40   10   1852			
<b>TESTA CAPE</b> One fixed and flash. lt.	41 14.7 9 8.9	Square yellow tower, 148 ft. high. Bright fixed lt., with red flash every 3 minutes ...	3c   220   15   1845			
<b>Lavezzi Island</b> One fixed light	41 20.1 9 16.2	Tower, 41 ft. high. Shows a br. fix. lt., but has a red sector of $80^{\circ}$ over the Lavezzi Rock, and a green sector of $105^{\circ}$ to N., from Perduto Rock to Prete Rock.....	4a   90   12   1874			
<b>RAZZOLI ISLAND</b> One fixed bright light	41 18.5 9 20.5	N. point, in Bonifacio Strait. A red sector of $70^{\circ}$ over Lavezzi Rock .....	2a   232   16   1845			
<b>Caprera Island</b> <i>Proposed</i>	41 14.3 9 29.7	Proposed (1861) on Galera Point, the N. point of the island.....	..   ..   ..   ....			
<b>CAPE FERRO</b> One rev. bright light	41 8.7 9 31.3	Tower, yellow, 110 ft. high, on hill, on N.E. extreme of island. Light revolving every $\frac{1}{4}$ minute .....	4b   220   17   1861			
<b>TAVOLARA ISLAND</b> One fixed and flash. lt.	40 55. 9 44.7	Iron frame, on N.E. end of island, S. side of Gulf of Terranova. Flash every 2 minutes	1c   540   30   1868			
<b>CAPE BELLAVISTA</b> One bright fixed light	39 55.8 9 43.3	Square tower, on the cape .....	1a   541   30   1866			
<b>CAPE CARBONARA</b> One rev. br. lt., $\frac{1}{2}$ min.	39 5.3 9 32.6	Circular yellow tower, 98 ft. high, on N.E. hill of Cavoli Island. Light shown seaward, from N.E. $\frac{1}{2}$ N. to N.W. $\frac{1}{2}$ W.....	1b   241   25   1858			
<b>ST. ELIAS CAPE</b> One fixed and flash. lt.	39 11. 9 9.9	Circular tower, 44 ft. high, on Female Point. Bright lt., with red & br. flashes alternately ev. 2 min. Obscured by E. and W. points of the gulf, W. of S.W. $\frac{1}{2}$ S. and E. of S.E. $\frac{1}{2}$ E.....	4d   239   14   1860			
<b>Cagliari Harbour</b> Two fixed <i>red</i> lights	39 12.6 9 7.3	One on each side of entrance .....	•   14   4   1856			
<b>CAPE SPARTIVENTO</b> One bright fixed light	38 52.6 8 50.8	On the S. cape of Sardinia .....	2a   264   23   1866			
<b>SAN PIETRO ISLAND</b> One fixed and flash. lt.	39 8.7 8 13.9	White tower, 61 ft. high, on Cape Sandalo, W. extreme of island. Flash every minute	2c   436   28   1864			
<b>CAPE CACCIA</b> One fixed and flash. lt.	40 33.6 8 10.1	Dark tower, 82 ft. high, on W. point of entrance to Porto Conté. Red flash every 4 m.	2c   610   26   1864			

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## ITALY.

<b>Ban Remo</b> One white, one <i>green</i> lt.	43 48.8 7 46.8	Bright light, on S. mole ..... Green lt. on N. mole; they lead up to the mouth of the harbour .....	●   29   3   1866			
<b>Maurizio Port</b> 1. One br. or <i>red</i> light 2. One fixed bright lt.	43 52.6 8 1.7	1. Near end of S. mole; bright to eastward, red to westward..... 2. On N. mole; shown from S.W. & S. to N.E. by E. & E. ....	●   31   1   1857   29   3			
<b>Oneiglia</b> One fix. br., one <i>green</i> lt.	43 53.1 8 2.6	Bright lt. on E. mole; green lt. on W. mole of port .....	●   26   3   1858   23   1			
<b>DELLE MELE CAPE</b> One fixed bright light	43 57.3 8 10.4	Octagonal tower, 68 ft. high, on the summit of the Cape. Shown from W. by N. & N. seaward, to N. by E. & E. ....	1a   307   20   1856			
<b>Vado Port</b> One fixed bright light	44 16.4 8 26.4	On San Lorenzo Fort .....	4a   46   10   1857			
<b>Savona Port</b> One br., one <i>red</i> light	44 18.7 8 29.5	Bright lt. on end of E. mole. Red lt. on end of N. mole .....	●   28   3   1857   21   3			
<b>GENOA</b>						
<b>BATTERY</b> One rev. br. lt., 1 m.	44 24.6 8 54.1	Square yellow tower, 217 ft. high, on battery at Cape San Benigno, at W. end of W. mole ...	1b   370   30   1841			
<b>West Mole Head</b>	.....	Upper bright, lower red lt. (temporary.) Mole is being extended 100 yds. beyond the lta....	●   46   3   1840			
<b>East Mole Head</b>	44 24.4 8 55.3	Revolving light every $\frac{1}{4}$ minute. Time-ball...	●   94   10   1840			
<b>Guard Ship</b>	.....	A green light .....	4a   28   ..   1867			
<b>Port Camogli</b> One red fixed light	44 21.5 9 5.1	Iron column, on S. end of mole .....	●   23   3   1866			
<b>Porto Fine</b> One fixed bright light	44 18.2 9 12.7	From a house on N. side of entrance .....	●   23   3   1857			
<b>Sta. Margherita</b> One bright fixed light	44 19.7 9 12.7	On E. end of Ligur mole, N.W. angle of Rapallo Bay.....	4a   35   10   1866			
<b>Porto Venere</b> One fixed bright light	44 3.1 9 50.2	Iron stand, on San Pietro Point .....	4a   23   8   1857			
<b>TINO ISLAND</b> One fixed bright light	44 1.6 9 51.	A white tower, 227 ft. high, on the S.W. part of the island.....	3a   384   18   1839			
<b>SPEZIA</b> 1. <i>Red</i> and bright lts. 2. One fixed bright lt. 3. <i>Red</i> and <i>green</i> lights	44 6. 9 48.	1. Upper bright, lower red lt., from lightvessel moored off Lagora mole .....	..   ..   ..   ..			
<b>Spesia Breakwater</b>	.....	2. West mole-head, Mercantile Port .....	..   ..   ..   ..			
		3. Red lt. on N. side, and green light on S. side of Arsenal basin entrance .....	..   ..   ..   ..			
<b>Ierici</b> One fixed <i>green</i> light	44 4.4 9 54.3	A breakwater, 2,400 yds. long, to be sunk 3 ft., is constructing. The West channel through it is marked by a pontoon, showing a red lt. above a green lt., and by a white lt. on Fort Sta. Maria. The E. channel by a pontoon with green and red lt., and a bright lt. on Sta. Therese Point. It is dangerous to pass between the floating lights .....	..   ..   ..   1874			
<b>Viareggio</b> One bright fixed light	43 51.9 10 14.5	An iron pillar on the mole .....	●   23   1   1867			
		Octagonal red tower, 39 ft. high, on the N. jetty. Shown from N. by W. to S.E. Also a red lt. on S. mole, and green lt. on N. mole .....	4a   46   10   1868			

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apertures	Height above N. W.	Visible in Mile.	Year established.
<b>LEGHORN, or Livorno</b>						
Meloria Shoal One red fixed light	43 32.7 10 13.1	Iron frame on S. end of shoal, 200 yds. from tower.....	4a	60	6	1867
<b>LEGHORN</b> One rev. lt., 40 secs.	43 32.6 10 17.7	Circular white tower on S. part of islet, S. of the harbour. Flashes red and bright alternately .....	2b	154	19	....
Curved Breakwater 1. One fixed light 2. One fix. & flash. lt.	.....	1. White tower on N. end. Lt. is green through an arc of 65° over Meloria Bank. Keep br. lt. in sight while passing the bank .....	4a	74	10	1857
		2. White tower on S. end. Flashes every 40 secs.....	6a	51	2	1869
North jetty	.....	Bright fixed lt. on S.W. extreme .....	4a	39	7	1857
Marzocco Tower	.....	A light in stormy weather .....	..	..	..	....
<b>Vada</b>						
1. One fixed red light 2. One fixed bright lt. 3. One fixed bright lt.	43 19.2 10 21.8	1. Red lighthouse in centre of fort .....	●	130	8	1867
		2. Small light on pier .....				
		3. Iron pile lighthouse on centre of shoal .....	4a	55	10	1868
<b>Capraia Island</b> 1. One fixed bright lt. 2. One fixed bright lt.	43 2.9 9 51.1 .....	1. On Ferrajone Cape, S. side of the harbour mouth .....	●	116	12	1857
		2. On the head of the S. mole .....	●	20	3	....
<b>ELBA ISLAND</b>						
Port Ferrajo Two fixed bright lts.	42 48.9 10 20.1	1. Tower, 59 ft. high, on Stella Fort, on W. side of the bay .....	4a	200	6	186
		2. On Fort Gallo, near Sesata Marittima .....	4a	21	5	186
Port Longone Two fixed bright lts.	42 45.2 10 24.5	1. On Focardo Fort, S. side of the bay .....	4a	105	13	184
		2. On San Giovanni Point. A light proposed for the head of the jetty .....	4a	46	8	1864
<b>PALMAJOLA ISLAND</b> One rev. br. lt., $\frac{1}{2}$ min.	42 51.9 10 28.4	Square tower, 46 ft. high, on centre of island, in Piombino Channel .....	2b	344	25	1844
<b>Pianosa Island</b>						
1. One bright fixed lt. 2. One lt., alternating bright and red	42 35.1 10 5.8	1. On battery W. of the port .....	4a	78	10	1864
		2. From the tower of the penal establishment; changes every minute .....	4b	140	17	1868
Port Talamone One fixed bright light	42 33.1 11 7.8	On end of the castle wall, S. of the town .....	4a	98	10	1865
Port San Stefano One fixed bright light	42 26.8 11 6.6	Near Lividonia Point, right of entrance. Shown from N. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S. ....	4a	108	10	1865
<b>AFRICA ROCK</b> One red fixed light	42 21.5 10 3.8	On iron piles, on the rock, at the S. end of the bank .....	4a	56	11	1867
<b>GIGLIO ISLAND</b> One br. rev. lt., 1 min.	42 22.5 10 53.8	White tower, 78 ft. high, on Vacchereccia Hill. Lt. masked to southward, from S.S.E. $\frac{1}{2}$ E. to S.S.W. $\frac{1}{2}$ W. A bright fixed lt. is shown on Giglio mole head .....	2b	1017	26	1864
Giannutri Island One fixed br light	42 14.5 11 6.3	On southern hillock .....	4a	312	10	1871
Port Ercole Two bright fixed lights	42 23.7 11 12.7	1. On Sta. Barbara battery, left of entrance... 2. Grey tower, 39 ft. high, on Rocca Fort, S. side of entrance .....	4a	52	8	1865
			4a	201	12	1830

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CIVITA VECCHIA</b> One rev. br. lt., 40 secs.	42 5.4 11 47.1	Grey tower, 105 ft. high, on S. end of break-water, or Antemurale. Shown seaward from N. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E. ....	2b	120	16	1840 1860
<b>Civita Vecchia Harbour</b> Two <i>green</i> fixed lts.	.....	One at the end of Bicchieri Mole; the other on the Lazaretto Mole, on N. side .....	●	23	3	1863
<b>RIVER TIBER</b>						
<b>Fiumara Grande</b> One fixed bright lt.	41 44.5 12 15.2	On N. part of San Michele tower, 78 ft. high, 1 mile from S. point of entrance. Shown from N. by W. $\frac{1}{2}$ W. to S.E. by S. ....	3a	77	15	1860
<b>Fiumicino</b> Two fixed lights	41 46.3 12 13.5	Red light on N. mole; green light on S. jetty	4a	20	4	1825 1878
<b>ANZIO or ANZO POINT</b> One rev. br. lt., 1 min.	41 26.8 12 37.3	Round tower, 38 ft. high, on battery, on point W. of mole .....	3a	92	15	1866
<b>Port Innocent XII.</b> One <i>red</i> fixed light	.....	On mole; to be left to southward in entering	4a	23	6	1866
<b>MONTE CIRCELLA</b> One bright fixed light	41 13.3 13 4.1	Round tower, 71 ft. high, on Cervia Battery. Shown from E. $\frac{1}{2}$ N. to W.N.W. ....	3a	124	17	1866
<b>Port Badino</b> Two bright fixed lights	41 16.9 13 12.	One on E., one on W. dike of Portatore Canal	4a	15	4	1866
<b>Terracina</b> One bright fixed light	41 16.9 13 15.5	On the mole head .....	4a	26	6	1866
<b>GAETA</b>	41 12.4	1. On Sta. Catherina tower, 78 ft. high. Flash every 3 minutes .....	4c	235	18	1854
1. One fixed & flash. lt. 2. One fixed light	13 35.3 .....	2. On Sta. Maria tower, at entrance. Lt. is red seaward, but bright in the harbour .....	4a	62	8	1857
<b>PONZA ISLAND</b>						
1. One br. rev. lt., $\frac{1}{2}$ m. 2. One bright fixed lt.	40 53.1 12 57.4	1. Square red tower, 52 ft. high, on Mte. della Guardia, S. end of island.....	2b	741	26	1866
3. One fixed <i>red</i> light 4. N.E. Point Revolving lt. <i>proposed</i>	40 53.7 12 57.7 40 55.5 13 0.	2. White tower, 101 ft. high, on Mount Rotunda della Madonna, on W. side of the island..... 3. Red tower, 34 ft. high, on battery at head of jetty..... 4. Proposed revolving lt., $\frac{1}{2}$ min. ....	2a	200	10	1858
<b>Vandotena Isle</b> One fixed bright light	40 47.5 13 25.5	At Nicolo Port .....	●	..	..	1869
<b>BAY OF NAPLES</b>						
<b>ISCHIA ISLAND</b>						
Point Caruso <i>Proposed</i> light	40 45.4 13 51.8	One fixed bright light proposed .....	1a	197	24	....
Sant' Angelo Point <i>Proposed</i> light	40 51.4 13 53.3	Light proposed .....	..	..	..	....
<b>Bagno Port</b>	40 44.8					
1. One fixed and flashing light 2. One <i>green</i> , one <i>red</i> light	13 56.5 .....	1. Red tower, 31 ft. high, at entrance of port. Bright fixed lt., with red flash every 3 min. 2. Green lt. on W. side, red lt. on E. side of entrance .....	4c	43	10	1856
			●	14	3	1857

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>BAY OF NAPLES—(continued).</b>						
PROCIDA ISLAND One fixed bright lt.	40 46.2 14 1.1	Square tower, 51 ft. high, on Chiupetto Point	4a	75	12	1847
CAFE MISENO One br. rev. lt., 1 m.	40 46.6 14 5.3	Octagonal tower, N. side of Bay of Naples ...	3b	292	20	1869
Baia One fixed bright lt.	40 48.8 14 4.7	Iron tower, 33 ft. high, on Tenaglia Fort .....	4a	46	10	1868
Pozzuoli, One fixed red light	40 49.3 14 6.8	On new mole, or outer pier of Caligula bridge. Lt. red seaward; bright to the harbour.....	4a	26	4	1860
Nisita Island One fix. lt., with flash	40 47.9 14 9.8	Red tower, 60 ft. high, on N. point of end of mole. Flash every 3 minutes .....	4c	78	12	1841
<b>NAPLES</b>						
1. St. Vincent Mole One fix. and flash. lt. every 3 minutes	40 50. 14 16.	Rebuilt, on extremity of mole; gray tower, with green lantern. Shows red seaward, and white within the port .....	6c	49	12	1874
2. Mole One rev. br. lt., 2 m.	40 50.3 14 15.5	2. Red tower, 130 ft. high, on the elbow of the mole .....	3b	158	20	1824
3. Green fixed light	.....	3. On end of St. Gennaro mole, at Mercantile Port. Obscured towards St. Vincent mole...	4a	52	6	1843
Torre del Annunziata One fixed red light	40 45.3 14 26.8	On the mole.....	..	33	2	1871
CASTELLAMARE	40 41.6 14 28.2	Red tower, 68 ft. high, on battery at mole head. Flash every 3 minutes .....	4b	106	15	....
One fixed and flash. lt.		Red lt. at end of mole constructing .....				1843
Campanella Point One fixed bright light	40 34.1 14 19.5	On S. extremity of Bay of Naples. Leads through the Bocca Piccola, inside Ischia ...	4a	77	10	1846
CAPRI ISLAND One rev. br. lt., 2 min.	40 32.1 14 11.8	Tower, 59 ft. high, on Carena Point, S.W. end of the island .....	1a	246	20	1867
Cape d'Orso One fixed and flash. lt.	40 37.8 14 40.8	Red tower, 69 ft. high, on extremity of Cape. In the Bay of Salerno. Flash every 3 min.	4c	82	12	1862
Cape Fuente One fixed bright light	40 39. 14 44.	Red tower, on the Cape. In the Bay of Salerno .....	4a	38	10	1864
CAFE PALINURO One bright fixed light	40 1.8 15 14.7	Octagonal tower, on a house; guide from Naples to Strait of Messina.....	1a	675	25	1870
Point Infreschi Proposed	39 57. 15 25.1	Revolving-light, 1 min., proposed .....	4b	...	...	....
CAFE SUVERO One fixed and flash. lt.	39 2.5 16 9.	White tower on the Cape. In the Gulf of Santa Eufemia. Flash every 2 minutes.....	4c	141	18	1869

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## SICILY.

<b>FAEO</b> One fixed and flash. lt.	38 16.1 15 39.2	On Pelorus tower, 51 ft. high. Flash every 3 minutes .....	4d	72	13	1853
<b>Santa Agata</b> One fixed light	38 15.1 15 36.	At 4 miles N. of Messina. A red, green, and bright lt., in connexion with the electric cable across the Strait .....	●	..	..	1865
<b>La Pace</b>	.....	At 2½ miles N. of Messina; white, red, and green light, for electric cables .....	●	..	..	1865
<b>MESSINA</b> 1. One fixed & flash. lt. 2. One green light 3. One red light	38 11.5 15 34.3	1. On San Ranieri tower, 132 ft. high, on E. part of Citadel Point. Bright lt., with red flash every 2 minutes .. 2. On Fort Campana, San Salvatore .. 3. On Punta Secca, ¼ mile N.W. from San Ranieri lt. ....	4b	134	12	1857
<b>Catania</b> 1. One fixed & flash lt. 2. Two fixed red lights	37 29.2 15 5.9	1. On the Sciarra Biscari, S. side of the port. Fl. sh. every 3 minutes .. 2. On end of old mole. Obscured over mole works in progress. Sciarra Biscari lt. W.N.W. leads S. of bell buoy, at extreme of works ..	4c	102	14	1863
<b>Cape Santa Croce</b> One fixed bright light	37 14.4 15 16.2	White tower, 78 ft. high. Lt. shown seaward, from S. by E. to N.W. ¼ N. ....	4a	27	2	1848
<b>Augusta</b> One fixed and flash. lt.	37 12.5 15 14.1	White tower, 66 ft. high, on N.E. corner of fort, on Avola Island. Flash every 1½ min. ....	4b	90	14	1858
<b>Magnisi</b> One fixed green light	37 9.3 15 14.7	White tower, 31 ft. high, on Greco Point, S. of the port. Shown eastward from S.S.E. ¼ E. to N. by E. ¼ E. ....	4a	49	10	1859
<b>Syracusa</b> 1. One fixed red light 2. One fixed green lt.	37 3. 15 16.2	1. In Maniace Castle, N. side of entrance.... 2. White tower, 78 ft. high, on Massa Point, S. of entrance .....	4a	90	10	1858
<b>MURRO DI PORCO</b> One rev. br. lt., ½ min.	37 0. 15 20.1	White tower, 47 ft. high, on the cape. Shown eastward from N. to S.W. ¼ S. ....	3b	114	14	1859
<b>COZZO SPADARO</b> One br. rev. lt., 2 min.	36 41.2 15 8.6	White tower, 154 ft. high, on the hill; near Torre Mobile Slope, S.E. point of Sicily. Shown to S. & E., from W. ½ S. to N.E. ¼ N.	1b	269	22	1864
<b>CAPE PASSARO</b> One fixed and flash. lt.	36 41.5 15 9.8	On N.E. angle of fort, on the island. Bright fixed lt. for 3 minutes, then a red flash, preceded and followed by one minute eclipses .....	5c	129	12	1871
<b>Correnti Island</b> One bright fixed light	36 38.5 15 5.3	Tower, 80 ft. high, on island, near S.E. point of Sicily .....	4a	53	11	1865
<b>SCALAMBRI or Secca Pt.</b> One fixed bright light	36 47.1 14 30.3	White tower, 114 ft. high, on the cape. Shown from S.E. ½ S. to N.W., eastward .....	3a	123	18	1862
<b>Licata</b> One fixed bright light	37 4.8 13 55.	Temporary, on breakwater, S. coast of Sicily .....	..	16	5	1872
<b>Girgenti</b> 1. One fixed red light 2. One green light	37 16.9 13 32.4	1. On pier-head .. 2. On end of mole, constructing at Port Empedocle .....	4a	47	5	1868
<b>MONTE ROSELLO</b> One fixed and flash. lt.	37 17.6 13 27.6	White turret, 26 ft. high, on the point. Fixed, with red flash every 2 minutes .....	3c	332	20	1859
<b>CAPE GRANITOLA</b> One bright fixed light	37 34.2 12 36.8	White tower, 110 ft. high, on S.W. point of Sicily .....	2a	213	19	1865

Lighthouses.

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Marsala</b> One fixed and flash. lt.	37 47.4 12 27.1	White tower, 49 ft. high, on end of mole, entrance of new port. Flash every 3 min.	d	65	12	1849
<b>PAVIGNANA ISLAND</b>						
<b>Marsala Point</b> One fixed <i>green</i> light	37 54.4 12 22.8	White turret, 39 ft. high, on S.E. point of island.....	5a	61	10	1859
<b>Point Ferro</b> One br. rev. lt., 1 m.	37 55.8 12 16.1	White tower, 126 ft. high, on Ferro or Sottile Point, W. point of island.....	3b	141	20	1860
<b>MARITIMO ISLAND</b> One br. fix. & flash. lt.	37 57.7 12 3.9	White tower, 71 ft. high, on Libeccio, or S.W. point. Flash every 4 minutes .....	1c	240	21	1867
<b>LEVANZO ISLAND</b> One fixed bright light	38 1.2 12 21.1	White tower, 39 ft. high, on Cape Grosso, or N.E. point .....	3a	282	18	1858
<b>Formiche, East Island</b> One fixed <i>red</i> light	37 59.4 12 26.4	N.E. part of tower, 67 ft. high .....	4a	85	10	1858
<b>TRAPANI</b> 1. One fixed & flash. lt. 2. One <i>red</i> fixed light 3. One <i>green</i> fixed light 4. One fixed bright lt.	38 0.8 12 30.	1. Octagonal tower, 133 ft. high, on Columbaja Island, S. point; on mole head. Flash every 3 minutes .....	4c	139	14	1855
		2. On end of mole; a guide to the anchorage .....	..	..	..	1858
		3. On Palumbo Rock, on end of breakwater... 4. On extr. of breakwater works, Ronciglio Pt.	●	40	2	1860
			..	..	..	1878
<b>SAN VITO CAPE</b> One fixed and flash. lt.	38 13.5 12 45.2	Circular white tower, 130 ft. high. Bright lt., with red flash every 2 minutes .....	3d	142	14	1859
<b>CAPE GALLO</b> One fixed bright light	38 14.1 13 24.1	Turret on the cape, N. of Palermo .....	4a	145	14	1854
<b>Palermo</b> 1. One fixed & flash. lt. 2. One fixed <i>red</i> light	38 8.3 13 22.8	1. White tower, 65 ft. high, on North mole. Flash every 2 min. Shown from N.E. by N. to E.S.E. 2. Rcd lt. on N. mole extr. A green lt. is shown at the end of the sunken part of the S. mole constructing .....	4c	92	12	1853
			..	38	2	1869
<b>Termini</b>	.....	Red lt. at end of breakwater constructing.....	..	18	4	1876
<b>VULCANO ISLAND</b> One fixed and flash. lt.	38 20. 14 55.	Rosario, or S.W. point. Flash every 3 min. Shown southward, from E. 1/8 N. to W. 1/8 N.	4c	452	16	1853
<b>Lipari Island</b> One fixed <i>red</i> light	38 28.7 14 57.5	On E. side, foot of Mte. Rossa. Guide to Casa Bianca anchorage .....	4a	115	4	1867
<b>Patti</b> One fixed <i>red</i> light	38 9. 14 58.5	A short white tower; to show the anchorage in Patti Bay.....	●	17	4	1874
<b>MILAZZO</b> 1. One fix. lt. with flash. 2. One bright fixed lt.	38 16.1 15 18.3	1. On end of mole. Bright lt., with red flash every 3 minutes .....	4c	41	10	1865
		2. On N. extremity of peninsula .....	4a	287	12	1869

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## ITALY (South Coast).

Sta. Veneré Lightvessel	38 46.	Between Pizzo and Nicolo Tower, near N.	4d	39	..	1868
One fixed red light	16 11.	part of breakwater .....				
Reggio	38 6.7	On church of Santa Maria, Porto Salvo, E.	•	75	5	1857
One fixed bright light	15 38.8	side of the entrance .....				
Cape del Armi	37 57.3	Octagonal white tower on the end of the cape; guide for Strait of Messina	4a	312	13	1867
One bright fixed light	15 41.					
CAPE SPARTIVENTO	37 55.8	White tower on square house, on the summit of the cape	1b	210	18	1867
One br. rev. lt., 1 min.	16 3.5					
CAPE COLONNE or Nau	39 5.5	Octagonal white tower .....	1a	133	20	1' 73
One bright fixed light	17 14.					
Cotrone	.....	On a house, on the great mole .....	..	23	2	1872
One red fixed light						
Taranto	40 26.3	On E. end of San Paolo Islet .....	5a	66	10	1867
One bright fixed light	17 10.2					
St. Vito Cape	40 25.2	White tower, 118 ft. high. Flash every 2 m.	3a	150	20	1848
One fixed and flash. lt.	17 9.1					1869
Gallipoli	40 2.5	1. White tower on St. Andrea Island .....	3c	149	15	1865
1. One fixed lt., flash every minute	17 56.1	2. From cylindrical tower, 16 ft. high, on mole head .....	..	36	6	1876
2. One fixed bright lt.						

## MALTA ISLAND.

Marsa Musceit Harbour	35 54.1	Lights vertical, on Tigne Point, N. side of the harbour .....	..	71	4	1859
Two fixed bright lights	14 31.1			46		
VALETTA HARBOUR	35 54.	1. White tower, 59 ft. high, on St. Elmo Castle. Shown seaward from N.W. by N. to S.E. by E.....	..	167	15	1851
1. One fixed bright lt.	14 31.5			80	4	1858
2. Two fixed red lights	.....	2. Red lts., vertical, on N.W. angle of Ricasoli Fort .....		55		
Marsa Scirocco	35 49.5	Tower, 73 ft. high, on Dallamara Point, E. side of bay; flashes red and white alternately ...	3b	151	15	1853
One flashing lt., $\frac{1}{2}$ min.	14 34.					
GOZO ISLAND	36 4.2	White tower, 70 ft. high, on N.W. point, near Cape Giourdan .....	1b	400	24	1852
One rev. br. lt., 1 min.	14 13.3					
Lampedusa Island	35 29.1	On Cavallo Bianco Point .....	..	..	..	1855
One fixed bright light	12 36.1					

## ADRIATIC SEA (West Shore).

CAPE STA. MARIA DI LEUCA	39 47.7	White tower, 154 ft. high, on an elevation near extremity of cape. Flash every $\frac{1}{2}$ minute...	1c	335	27	1866
One fixed lt., with flash	18 23.					
CAPE OTRANTO	40 6.4	White tower, 98 ft. high, on S.E. point of Italy .....	4a	196	18	1867
One bright fixed light	18 30.6					
Point San Cataldo	40 23.4	Yellow tower on a house, near Lecce .....	4a	56	7	1866
One bright fixed light	18 19.1					

Name and Character of Light.	Lat. N. Long. E. o /	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BRINDISI</b>						
1. One fix. & flash. lt.	40 39.8 18 1.	1. Circular tower, 36 ft. high, on N.W. Petagne Rock. Fixed lt., with flash every 8 min....	4c	72	13	1861
2. One fixed red light		2. On Castello Island, Fort di Mare.....	4a	106	10	1844
3. One bright fix-d lt.		3. From lt.-ho. at end of mole of Fort di Mare.....	a	33	9	1876
4. One green light		4. On S.E. entrance to inner harbour, on end of Little Mole.....	4a	17	..	1868
5. One red light		5. Leading light on Minaret, on quay.....	..	..	..	1873
<b>CAFE GALLO</b>	40 41.	White tower, 82 ft. high, on Torre di Penne...	3b	129	15	1861
One rev. br. lt., $\frac{1}{2}$ min.	17 56.					
<b>Port Monopoli</b>	40 57.3	On head of Castello mole.....	..	..	..	1858
One fixed bright light	17 18.7					1873
<b>Mola</b>	41 3.9	On the eastern pier.....	●	..	9	1858
One intermitting br. lt.	17 6.9					
<b>BARI</b>	41 8.					
1. One fixed & flash lt.	16 53.5	1. White tower, 174 feet high, on San Cataldo Point. Flash every 2 minutes.....	1c	218	20	...
2. One red light		2. On mole head. Obscured from S.E. by E. by the North to N.N.W. $\frac{1}{2}$ W.....	●	23	5	1859
3. One green light		3. On extreme of Old Mole.....	..	30	4	1869
4. One red light		4. From tower near extremity of breakwater, constructing. Bell-buoy marks extr. of works	a	31	5	1877
<b>Molfetta</b>	41 12.7	Tower on extremity of detached mole. Flash every 3 minutes.....	4a	64	14	1848
One fixed and flash. lt.	16 36.6					
<b>Barletta</b>	41 19.9	White tower, 62 feet high, on end of eastern mole.....	4a	69	14	1864
One fixed bright light	16 18.7					
<b>Manfredonia</b>	41 38.	1. Near mole-head.....	●	26	6	1864
1. One bright fixed lt.	15 56.	2. South of town, near East mole, for packet steamers. Red flash every minute.....	4c	65	14	1868
2. One fixed & flash. lt.			4a	253	18	1866
<b>Port Mattinata</b>	41 40.8	Stone tower, 15 feet high, on Rossa or Mte. Grugno Point. Flash every 3 minutes.....				
One fixed lt., with flash	16 2.5					
<b>Pelagosa Island</b>	42 24.	On summit of island. Fixed lt. with br. flash every $\frac{1}{4}$ minute.....	1c	135	18	1875
One fix. & flash. br. lt.	16 16.					
<b>VIESTI</b>	41 52.1	White octagonal tower on the Sta. Croce Rock, near Gargano Head. Light visible from N.W. $\frac{1}{2}$ N. by N. and E. to S. ....	1a	131	15	1867
One bright fixed light	16 12.5					
<b>TREMITI ISLANDS</b>	42 8.5					
1. One bright fixed lt.	15 31.9	1. Octagonal tower, 59 feet high, on E. end of Caprara Island. Vis. betw. N.W. by W. $\frac{1}{2}$ W. by N. and E. to S. by W. $\frac{1}{2}$ W. ....	4a	118	17	1868
2. One bright fixed lt.		2. On Custom-house, E. side of Sta. Nic. la Id. ....	4a	43	6	...
<b>Port Ortona</b>	42 19.7	On extremity of new mole, in construction ...	4a	36	10	1872
One bright fixed light	14 24.7					
<b>ANCONA</b>	43 37.6					
1. One rev. lt., bright 45 seconds, eclipsed 45 secs.	13 31.1	1. White tower, 54 ft. high, on Monte dei Capuccini, $\frac{1}{2}$ mile E. of port. Hidden to N. of S.E. by Mount Conero.....	2b	406	25	1860
2. One green light		2. Green lt. on N. end of S. mole. Mole-head not to be approached nearer than 100 yds....	..	34	9	1868
3. One red light		3. Red lt. on new N. mole, not in bad weather. Green lt. on S. mole bears S.S.W. 66 yards from extreme of breakwater .....	..	34	3	1868
<b>Sinigaglia</b>	43 43.7	One on N. mole; one on E. canal; changes to green lt., with freshets.....	●	69	10	1865
Two bright fixed lights	13 13.3		..	22	2	1864
<b>Fano</b>	43 51.3	Tower, 51 feet high, on East mole .....	●	58	11	...
One fixed bright light	13 0.9					
<b>Pesaro</b>	43 55.6	Tower, 39 ft. high, on E. mole .....	●	50	9	...
One fixed bright light	12 54.5					
<b>Cattolica</b>	43 58.5	Light red to sea, bright to land .....	●	18	7	...
One fixed light	12 43.6					
<b>Rimini</b>	44 4.8	White tower on end of stone jetty; the other on end of E. jetty. Lights in one lead into the harbour .....	4a	69	10	1862
Two fixed bright lights	12 34.4		●	25	4	1864
<b>Cesenatico</b>	44 12.5	Towers, 44 and 29 ft. high, $\frac{1}{2}$ mile from, and near end of breakwater, on E. side of channel. In one, S.W., lead up to canal .....	●	30	9	...
Two bright fixed lights	12 24.3		..	55	10	...
<b>Cervia</b>	44 16.	Temporary, on end of mole, during reconstruction of lighthouse .....	4a	49	3	1875
One fixed bright light	12 21.1					
<b>Corsini</b>	44 29.5	Intermitting lt., $\frac{1}{2}$ min., on octagonal tower, 80 feet high, near S. entrance of canal, on port side. Fixed lt. on end of pier, at 875 yards from flashing lt. In one they lead up	4c	87	17	1862
One interm., one br. lt.	12 16.4		●	24	5	1868

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>Magnavaca</b> One bright fixed light	44 40.7 12 14.8	Near mole.....	●	32	4	....
<b>Punta di Goro</b> One fixed bright light	44 48.0 12 20.8	Tower, 59 feet high, on right side of entrance to River Po .....	4a	66	...	1865
<b>Maistra</b> <i>Proposed</i>	44 59. 12 32.1	Proposed fixed light on the point.....	..	..	..	....
<b>Port Chioggia</b> One fixed br. light	45 13.7 12 17.4	On Fort San Felice tower, S. point of entrance	4a	52	12	1863
<b>VENICE</b>						
<b>Malamocco</b> One fixed bright lt.	45 20.5 12 19.1	Bright lt. on Rocchetta inner mole, S. side of entrance; green lt. on S. side of entrance of Spignon Canal. In one, N.W. by W., 1,380 yds. apart, they lead in.....	4a	48	10	1855
One fixed green lt.		Octagonal tower on end of N. mole.....	4a	48	6	1860
One fixed br. lt., red flash $\frac{1}{2}$ min.			6c	38	10	1874
<b>Porto di Lido</b> One fixed bright lt.	45 26. 12 30.	St. Erasmo, N. side of channel.....	..	..	9	....
<b>PIAVE VECCHIA</b> One fixed bright light	45 28.8 12 35.1	White tower, 139 ft. high, on E. point of Port Jesola, or Piave Vecchia .....	●	148	14	1853
<b>Grado Lightvessel</b> One fix. br.lt., red flashes	45 41.5 13 23.7	In 5 fms., near Port Primero. Bright lt., with red flash every 2 min. Steam fog-trumpet	4a	30	10	1869
<b>Grado</b>	.....	Three small fixed leading lights .....	..	16	2	1873
<b>Duino</b> One bright fixed light	45 46. 13 36.	Fixed light .....	●	12	1	1862
<b>Sdoba Point</b>		Proposed light.....	..	..	..	....
<b>Barcola</b> One fixed red light	45 40.9 13 45.2	From iron post on mole. Cannot be lighted in strong N.E. winds .....	..	18	4	1874
<b>TRIESTE</b> 1. One intermit. br. lt. 2. Two br., one red lt. 3. One br., one green lt. 4. Two red, 2 green lts.	45 38.8 13 46.	1. On Santa Teresa mole. Flash of 8 secs. ev. $\frac{1}{4}$ min. Fog Horn, 2 blasts every $\frac{1}{4}$ min. ... 2. Triangularly, on S. Carlo mole. Upper lt. red 3. On Giuseppino mole. Green lt. seaward.. 4. Two red lts., on S. end of new breakwater; two green lts., on N. end of ditto. Vessels should pass S. of red lts. ....	3b	116	13	1758
<b>Capo d'Istria</b> One fixed green light		From lantern at end of Galere Mole, Trieste Bay.....	..	17	2	1876
<b>Mnja Bay</b> One bright fixed light One red fixed light	45 36. 13 43.	Stone tower, 36 feet high, on Point Sottile, S. point of bay in Trieste Bay .....	4a	46	9	1869
<b>Port Rose</b> One fixed green light	45 31. 13 34.5	On mole-head .....	..	19	2	1876
<b>Pirano Port</b> 1. Two fixed lights 2. One fixed green lt. 3. One fixed red light	45 31.2 13 33.7	On the end of small mole at San Bernardino Point, entrance of port in Pirano Bay.....	..	33	8	1873
<b>Bassania</b> One revolving lt., 1 min.	45 29.5 13 29.2	1. One on each mole head. Lts. red seaward, bright to land .....	●	15	2	1843
<b>Port Umago</b>	.....	2. From lantern at head of new mole..... 3. On bastion on Point Pirano, or Madonna della Salute .....	..	22	2	1876
<b>Port Quietto</b> One fixed bright light	45 18. 13 34.	White tower, 62 feet high, on Salvore Point. Steam Fog-trumpet, 10 secs. in ev. 40 secs.	5a	33	9	1872
<b>Parenzo</b> One fixed red light	45 14. 13 36.	On mole.....	●	112	15	1818
<b>ROVIGNO</b> 1. One fixed & flash. lt. 2. One fixed light	45 2.2 13 37.1	1. White tower, 43 feet high, on Giovanni di Pelago Rock. Alternately red and white dashes, 2 min. .... 2. On mole. Lt. red to seaward, bright to land .....	3b	73	12	1854
<b>Port Fasana</b> One fixed bright light	44 56. 13 48.	On the extremity of the jetty in the harbour...	●	19	4	1865
<b>BRIONI ISLANDS</b> One rev. bright light	44 57. 13 43.	Lt.-tower, 49 feet high, on S. extr. of Scoglio Grande. Lt. shows flash ev. $\frac{1}{2}$ min., visible seaward betw. N.W. by W. and N.W. $\frac{1}{2}$ N.....	4b	65	14	1877
<b>Pola</b> 1. One fixed bright lt. 2. Two fix. bright lts. 3. Two red fixed lts. 4. One red, one green lt.	44 52.5 13 51.	1. On C. Compare, betw. N.E. $\frac{1}{2}$ E. & S.W. $\frac{1}{2}$ W. 2. From lightvessel, 3 cables N. of Olivij Id. .... 3. On Olivij Id. and main. In line, indicate direction of water pipes .....	a	55	10	1860
	.....	4. Red lt. on Fort Franz small mol; green lt. on S. Pietro Island.....	..	..	..	1873

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. in Miles.	Visible in Miles.	Year established.
<b>Port Veruda</b> One fixed red light	44 50.3 13 50.	From iron stand on Verudella Pt., near keeper's dwelling. Lt. shown seaward betw. N.W. & W. & S. by E. & E., obscured betw. S. by E. & E., & E. by S. Vis. towards Port Veruda. Keep at least a cable off Verudella Point ...	a   39   8   1877			
<b>CAPE PROMONTORE</b> One fixed light Lower red fixed light	44 45.3 13 54.3	White tower, 88 ft. high, on Porer Rock, 1 mile S.W. of the cape. .... Lower red lt. from base of tower to S. by E., over Pericoloso Rock .....	3a   111   16   1832 a   27   6   1876			
<b>Merlara Point</b>	44 49.	Light proposed .....	..   ..   ..   ..			
<b>Punta Nera</b>	44 57.5	Fixed bright light on house .....	..   44   9   1873			
<b>Port Rabas</b> One fixed green light	45 4.3 14 9.5	On St. Andrea Point .....	a   40   10   1871			
<b>Galiola Rock</b> One fix. & flash. lt.	44 43.7 14 II.	Iron tower, 64 ft. high. Red flashes every 5 minutes .....	4b   71   10   ....			
<b>Unie Island</b>	44 37.3	On Netak Point .....	6a   44   8   1873			
<b>Lovrana</b>	45 17.	Light proposed .....	..   ..   ..   ..			
<b>Port Ika</b>	.....	One fixed br. lt. near head of Quarnero Gulf .....	..   138   2   1873			
<b>Volosca</b> One fix. red and br. lt.	45 21.1 14 19.5	Shown on mole head, red seaward between S.S.W. & W. and S.E. by E. & E., bright over remainder of horizon .....	..   18   8   1876 ..   ..   ..   1878			
<b>FIUME</b> 1. One fixed bright lt., with red rays 2. Lt.-vessel, showing upper red, lower br. lt. 3. One fixed green lt.	45 19.5 14 26.	1. On shore at western part of town. Shown betw. W.N.W. and S. & E. By day red & white globe is shown from lighthouse..... 2. Moored, at extr. of breakwater constructing, S. by W. 1/2 cable from shore lt. No. 1..... 3. From Zichy pier-head constructing, S. of barracks .....	..   39   10   1878 ..   23   2   .. ..   18   ..   ..			
<b>Porto Re</b> One fixed & flashing lt.	45 15.3 14 33.6	Tower, red & white bands, on D'Ostro Pt., S. point of port. Bright flash every 3 minutes	5c   54   14   1872			
<b>Voschizza Point</b> One fixed bright light	45 14. 14 35.	Lantern on iron stand, on N. point of Veglia Island; in Canale de Maltempo .....	a   31   8   1875			
<b>Dubno Point</b> One fixed red light	45 15. 14 34.5	Small light in Canale de Maltempo .....	..   72   ..   1875			
<b>Ertac Point</b>	.....	Green light in Canale de Maltempo .....	..   23   2   1875			
<b>Czirquenizza</b>	45 10.2	A fixed red lt. on S. mole, Maltempo Canale ..	..   13   3   1874			
<b>Port Selce</b>	45 9. 14 43.	A fixed br. lt. on E. pt. of Port Selce, and a fixed green light on end of pier .....	a   39   12   1875 ..   13   2   1875			
<b>Port Malinsca</b> One fixed green light	45 7.5 14 30.2	At end of mole, on N.W. side of Veglia Island, Gulf of Quarnero .....	●   19   2   1872			
<b>Plaunick Island</b>	.....	Corsia Channel. Light proposed .....	..   ..   ..   ..			
<b>Negrito Point</b>	44 58.5	Red light on S.W. side of Veglia Island .....	a   ..   5   1874			
<b>Bescanuova</b> One fixed green light	44 58. 14 46.	On Cricin Point, near port, S.E. end of Veglia Island .....	..   54   6   1874			
<b>Novi</b> One fixed red light	45 7.5 14 47.	On the mole at Novi, in the Morlaccia Channel .....	..   12   3   1873			
<b>Segna Port</b> 1. One bright fixed lt. 2. One red, one br. lt.	44 59.2 14 53.5	1. On the Mari Art mole. Not shown in bad weather .....	●   28   8   1865			
<b>Port Veglia</b> One fixed bright light	45 1.5 14 34.7	2. Bright lt. on mole to N.W.; red lt. to S.W. From mole-head, Veglia Id., Gulf of Quarnero. No lenses towards harbour .....	..   ..   7   1873 a   23   9   1877			
<b>Parvicchio Island</b> One fixed bright light	44 56. 14 46.	Iron frame on red building, with yellow shutters, on Maistro Point, N.W. pt. of island .....	a   67   10   1875			
<b>Terstenich Island</b>	44 40.3 14 35.5	Stone tower; fixed white lt., with red sector of 11½° towards navigable channel on S. side of Cherso Island .....	4a   88   16   1873			
<b>Cherso</b> 1. One fixed & flash. lt. 2. Light proposed 3. One fixed light 4. One fixed light 5. Fix. & flash. lt. ev. m.	45 7.2 14 16.5	1. On Point Prestenisce, Gulf of Quarnero. Bright lt., with red flash every 3 minutes ... 2. On Glavina Point .....	5c   56   11   1872 ..   ..   ..   ..			
<b>Palazzoli</b>	44 32.	3. On Covacine Point, on end of little mole ... 4. On Molino Point; only for Lloyd's steamers .. 5. On Zaglava Rock, W. side of Cherso Id. ...	●   24   10   1871 ●   7   2   1864 5c   65   13   1876			
<b>Sansego Island</b>	44 31.	Light proposed .....	..   ..   ..   ..			
		Building on the island. Revolving light 1 min.	4b   ..   17   ..			

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Your established.
<b>LOSSINI ISLAND</b>						
Port Augusto or Lossin Piccolo	44 33.2 14 25.	1. Iron column, in red & white bands, on W. end of Mortar Rock, Lossin Piccolo; red to entrance, from W. by S. & S. to N.E.; br. to seaward, from S. by E. & E. to W. by S. & S. 2. From pole, on Colludarz Rock ..... 3. At the town .....	4a   ..   ..	36   29   17	10   3   2	1867   1876   1874
1. One br. or red lt. 2. One fix. green lt. 3. One fixed red lt.						
<b>Cigale Port</b>	44 31.8	On Madonna Point, South side of entrance ...	4a   ..	34   ..	8   ..	1865
One fixed green light	14 26.5					
<b>Port San Pietro</b>	43 23.2	From mole head, Port San Pietro, N. coast of Brazza Island. Shown between S.W. & S. northward, to N.W. & N.	a   ..	..   ..	5   ..	1878
One fixed green light	16 33.					
<b>Jablanaz</b>	44 42.3	In Morlacka Channel. One fixed bright lt., one red light .....	..   ..	47   33	12   2	1875
Two beacon lights	14 53.7					
<b>Carlopago</b>	44 31.2	On end of new mole. Not shown during the bora .....	..   ..	16   ..	5   ..	1873
One bright fixed light	15 4.5					
<b>Lukovc</b>	44 26.	Light proposed .....	..   ..	..   ..	..   ..	....
<b>Arbe Island</b>	.....	Light proposed at Sorigno Point, and light building at Gabovacatrida .....	..   ..	..   ..	..   ..	....
<b>Point Loni</b>	44 42.	North extreme of Pago Id. Light proposed...	..   ..	..   ..	..   ..	....
<b>Port Pago</b>	44 27.	Bright lt. from green column at head of mole .....	..   ..	16   ..	2   ..	1874
<b>Gruizza Island</b>	44 24.5	Fixed lt., varied by red flashes every minute, on tower, 39 ft. high .....	5a   ..	56   ..	12   ..	1873
						1876
<b>Luntostrak</b>	44 22.	Light proposed .....	..   ..	..   ..	..   ..	....
<b>Solve Island</b>	44 21.	From iron stand on keeper's dwelling, 50 yds. from extremity of St. Antonio Point .....	6a   ..	23   ..	8   ..	1875
One fixed bright light	14 42.					
<b>Idolo</b>	44 10.	Light proposed .....	..   ..	..   ..	..   ..	....
<b>BIANCA POINT</b>	44 9.7	White tower, on N.W. end of Grossa, or Lunga Island. A fixed lt., with flash every 2 min.	3b   ..	130   ..	18   ..	1849
One fix. & flash. br. lt.	14 49.5					
<b>Point Amica</b>	44 7.6	Bright fixed lt. on the point, near Zara .....	4a   ..	39   ..	9   ..	1869
<b>Zara</b>	44 7.2	On each point of the entrance .....	..   ..	..   ..	..   ..	....
Two fixed red lights	15 13.5					
<b>Port Sale</b>	.....	E. coast of Grossa Id. Light shown from iron post off Lorini mole-head .....	..   ..	20   ..	2   ..	1877
One fixed red light						
<b>Port Tajer</b>	43 51.	Tower, 85 feet high, painted in red and white bands, on N.W. extreme of Sestrize (La Sorelle) Rocks, entrance of Port Tajer .....	4b   ..	156   ..	17   ..	1876
Fixed br. lt., with red & br. flashes every min.	15 12.					
<b>Babae Island</b>	43 57.3	In Pasman Strait. Shown from crane on W. end of island, betw. N.E. by N. & S.E. & S.	6a   ..	22   ..	10   ..	1874
One fixed bright light	15 23.7					
<b>Stretto</b>	.....	A small lt. shown from buttress of swing bridge .....	..   ..	20   ..	2   ..	1873
<b>Sebenico</b>	43 44.	1. On S.E. end of small island, at entrance .....	..   ..	25   ..	5   ..	1875
1. One fixed red light 2. One fix. br. or red lt.	15 53.	2. On mole. Lt. is bright to N.W. & N., and red to S.E. and E. .....	..   ..	18   ..	3   ..	1865
<b>Luciette Rock</b>	43 37.5	On the rock. A flash every half minute .....	4b   ..	128   ..	17   ..	1872
One br. fix. & flash. lt.	15 34.5					
<b>Port Regosiniza</b>	43 31.	White tower on Mulo Rock, at entrance .....	4a   ..	77   ..	13   ..	1873
One bright fixed light	15 55.					
<b>Brazza Island</b>	43 20.	On Spec Point, East side of Spalatro Strait ...	6a   ..	55   ..	9   ..	1875
One fixed bright light	16 24.					
<b>Spalatro</b>	43 30.2	1. On extr. of new mole, on E. side of entr., which extends 500 yards W. by N. from Boticelli Point .....	..   ..	24   ..	5   ..	1878
1. One fixed green lt. 2. One fixed bright or red light	16 26.5	2. From bridge near railway station. Fixed bright light, with red sector .....			2   ..	
<b>Amissa</b>	43 26.4	Red light for Lloyd's steamers .....	..   ..	..   ..	..   ..	....
<b>Macarska</b>	43 17.	On mole-head. Lt. is red seaward, and br. to harbour and over neck of peninsula .....	..   ..	20   ..	3   ..	1873
One red or bright lt.	17 1.					
<b>Lesina Island</b>	.....	Br. fix. lt. on N. mole. Not lit during the bora .....	..   ..	18   ..	2   ..	1871
Port Gelsa						
<b>Pecognidol Rock</b>	43 8.	Red lt. at E. entrance to Lesina Channel .....	a   ..	76   ..	7   ..	1872
<b>Vodnach Rock</b>	43 10.	Building on Vodnach Rock .....	..   ..	..   ..	..   ..	....
<b>San Giorgio Point</b>	43 7.5	On E. side of San Antonio church, on E. point of Lesina Island. Temporary .....	..   ..	30   ..	3   ..	1874
One bright fixed lt.	17 12.					

Name and Character of Light.	Lat. N. Long. E. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LISSA ISLAND</b>						
<b>PROMONTORE POINT</b>	43 4.3	White tower, 92 feet high, on Promontore or E. point. Flash every minute. Shown to S. and E. from N.W. by W. & W. to S. ....	1a	125	16	1856
One fixed & flash. lt.	16 15.3					
<b>Comisa</b>	43 2.3	On harbour mole. Lt. is red seaward, br. to harbour, W. end of Lissa.....	..	..	..	1873
One red or bright lt.	16 5.					
<b>Port S. Giorgio</b>	43 4.5	Stone tower, 30 ft. high, on Hoste Island ....	6a	30	3	1874
One fixed red light	16 12.3					
<b>Sabbioncello Peninsula</b>	43 2.7	1. Tower, 36 ft. high, on Cape Gomena, N.W. end of peninsula .....	a	79	10	1874
1. One bright fixed lt.	17 0.3	2. At extreme of mole, Orebiccio; temporary	..	24	..	1875
2. One green fixed lt.						
<b>Port Curzola</b>	42 57.9	1. On mole head, Port Pedoccio. Shown through channel to W.N.W. & to eastward. Green sector towards port, and also towards Curzola Channel.....	..	20	6	1869
1. One red fixed light	17 7.5	2. Square tower on Sorelle Rock, in the Curzola Channel .....	6a	60	..	1871
2. One fixed bright lt.						
<b>Cazza Islet</b>	42 45.	Lighthouse, painted red and white vertical stripes, on Gradisca Point .....	5a	308	10	1878
One red light	16 29.2					
<b>ROSSO PORTO</b>	42 43.3	White tower, 56 feet high, on Skrigeva Point, S. end of Lagosta Island .....	..	342	21	1851
One fixed bright light	16 53.5					
<b>Olipa Island</b>	42 45.5	On E. end of island, Bocca Falsa, Kalimota Channel. New white stone tower, 306 yds. W. of former lt.-ho. Light shown between W. by N. & N., southward, to E. by N. & N.	..	..	..	1872
One fixed red light	17 47.					1878
<b>Port Slano</b>	42 47.	From mast on Dogna Point, N.W. point of entrance .....	..	49	5	....
One fixed green light	17 50.					
<b>Gravosa Port</b>						
1. One fixed green lt.	42 38.	1. On Cantafico mole .....	●	18	4	1867
2. One fixed bright lt.	18 3.1	2. On outer Pettina Rock, at entrance of port	6a	88	8	1872
3. One fixed red light		3. On N. end of Daxa Rock, at entrance .....	..	61	5	1872
<b>St. Andrea or Donzella Id.</b>	42 39.	Stone tower, showing a fixed br. lt. with red flash every 15 secs. ....	4c	223	14	1873
One fixed and flash. lt.	15 57.					
<b>Ragusa</b>	42 38.	On outer end of new mole at Fort Molo. Red seaward.....	●	25	4	1873
One fixed light	18 7.					
<b>CATTERO GULF</b>						
1. One rev. br. lt., $\frac{1}{2}$ m.	42 23.	1. Tower, 55 ft., on summit of Point D'Ostro	3b	263	20	1874
2. One fixed red light	18 32.	2. On end of new mole at Castel Nuovo .....	..	20	2	1873
3. Two fix. bright lts.		3. Meligna, on Lazaretto, vertical; viz. betw. S.W. & W. & E. by S. & S.; guide to the anchorage .....	a	26	4	1856
4. One fix-d red light		4. At St. Domenico Point, on W. side of Catene Strait .....	..	..	..	1878
5. One fixed green lt.		5. From wooden support at N.W. pt. of entr. of Catene Strait .....	..	13	..	18.8
6. Occasional red light		6. At Po: di Risano .....	..	12	2	1876
7. One fix. red & br. lt.		7. On mole head of Cattero. Red northward towards Persagno, and white towards town				
<b>Budua</b>	42 16.	From lamp-post on mole head .....	..	..	2	1872
One fixed bright light	18 50.					
<b>Antivari</b>	12 5.0	From mast above white house on Volovica Point, S. side of bay. Light temporarily discontinued, 1878 .....	4a	121	8	1864
One fixed bright lt.	19 4.5					
<b>Durazzo</b>	41 17.1	On the wall of Quarantine Office. Lt. bright betw. W. & S. and S.W. by W. & W., red betw. S.W. by W. & W. and S. & W., and br. betw. S. & W. and S.E. by E. & E. ....	5a	52	12	1856
One fixed light	19 29.8					1878
<b>Saseno Island</b>	40 30.	On the N.W. summit of the island. Flash every minute .....	..	328	21	1871
One bright revolving lt.	19 13.6					
<b>Aviona or Valona</b>	40 25.5	On a point 2 miles S. of lazaretto.....	4a	82	5	1864
One fixed red light	19 27.9					
<b>Port Palermo</b>	40 3.	Light proposed .....	●	..	..	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CORFU ISLAND</b>						
TIGNOSO	39 48.2	Tower, 55 ft. high, on summit of rock .....	●	100	14	1825
One fixed bright lt.	19 57.5					
Corfu Harbour	39 37.1	In the citadel .....	●	240	12	1822
One fixed bright lt.	19 56.5					
Lefkimo Lightvessel	39 27.5	On N. part of shoal, in 5 fathoms .....	●	18	5	1825
One fixed bright lt.	20 5.2					
Salternes	.....	A small lt. near Salternes, at S.E. end of island	..	24	3	1874
<b>PAXO ISLAND</b>						
LAKA POINT	39 13.	White tower, 121 ft. high, on N. end of island.	●	369	22	1842
One fixed bright lt.	20 9.	Shown to N. and W., from S. by W. to E. by S. ....				
Port Gayo	39 11.5	White tower, 70 ft. high, on the convent on Madonna Island, E. coast of Paxo .....	4a	107	10	1825
One fixed bright lt.	20 12.3					
Santa Maura	38 50.5	Circular, on the mole .....	..	54	9	....
One fixed bright light	20 42.9					
Ithaca Island	38 22.3	1. At Port Vathy. On Andrea Point, E. side of entrance .....	..	30	6	1848
1. Two fixed bright lts.	20 42.6	2. In the lazaretto, S. side of the harbour; only shown in the channel .....	..	14	..	1848
FANO ISLAND	39 51.5	Round white tower, 46 feet high, on Point Kastru, East point of Fano Island. Bright	2c	346	25	1872
One fixed and flash. lt.	19 27.	fixed light, red flash every minute .....				
<b>CEPHALONIA ISLAND</b>						
GUARDIANA ROCK	38 8.	White tower, 100 ft. high, on the island, out-side of Argostoli .....	..	122	16	....
One fixed bright lt.	20 26.5					
Lixuri	38 12.	On the mole, on the W. side of the harbour ..	..	18	..	1861
One red fixed light	20 27.					
Theodoro Point	38 11.6	Doubtful if shown .....	..	35	4	1865
One bright fixed lt.	20 29.5					
Port Viscardo	38 27.5	On West point; guide for channel between Ithaca and Cephalonia .....	..	..	..	....
One bright fixed lt.	20 35.9					
Missolonghi	38 19.5	On St. Saviour's, or W. pt. of entr. to lake; 6 miles N.W. by W. & W. from Bakari Point ..	..	..	10	1858
One fixed bright light	21 23.3					
Patras	38 14.4	White open column, 40 ft. high, on mole head. Flash every 2 minutes .....	5c	65	12	1858
One fixed and flash. lt.	21 46.3					1869
Kastro Rouneli	38 19.7	On S. angle of fort, N. side of entrance to Gulf of Corinth .....	a	38	6	....
One fixed bright light	21 46.3					
Cape Morno	38 22.	Near River Morno, Gulf of Corinth .....	4a	46	7	1869
One fixed red light	21 53.					
CAPE PAPAS	.....	Temporary iron tower on extr. of spit. A flashing lt. will be shown on the cape, vis. 20 miles off. (Lt. temporarily discontinued, Dec. 1878)	6a	30	8	1877
One fixed red light						
Zante Island	37 48.6	1. Bright lt. on Cape Krionero, E. side of the island .....	..	93	12	1869
1. One fixed bright lt.	20 54.6	2. From red iron pillar on mole-head .....	..	30	6	1859
Glarenza	37 56.5	On mole-head .....	..	22	2	1864
One bright fixed light	21 9.2					
STRIVALLI ISLANDS	37 15.2	Square tower on summit of Stamphani Island, South of the convent .....	..	127	12	1829
One fixed bright light	21 1.2					
CAPE KATAKOLO	37 38.	Tower, 1/4 mile within South point of peninsula. Fixed light, with flash every 3 minutes .....	4b	149	17	1865
One fixed and flash. lt.	21 18.8					
Navarin Bay	.....	On South extreme of Pylos Island .....	..	116	5	1875
One fixed red light						
Marathonisi	36 44.7	On Cranae Island, Port of Marathonisi. Fixed	3c	98	15	1873
One fixed and flash. lt.	22 35.5	light, with red and white flashes every min.				

CAUTION.—The lights in the Ionian Sea are defective, and not visible so far as reported.

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year Established.
<b>ARCHIPELAGO.</b>						
<b>CEBRIGO ISLAND</b>						
<b>SFATHI CAPE</b>	36 22.8	Stone tower, 62 ft. high, $\frac{1}{2}$ mile from N. pt. of Id. Shown seaward from W. by S. $\frac{1}{2}$ S. to S.S.E. $\frac{1}{2}$ E. Flash of 10 secs. in ev. min. ....	●	363	24	1857
One fix. & flash. br. lt.	22 57.5					
<b>Kapsali Bay</b>	36 8.5	E. side of the bay, on S. end of island. Shown southward, from S.S.E. to S.W. $\frac{1}{2}$ S. ....	..	91	8	1853
One fixed bright lt.	23 0.3					
<b>Cape Monemvasia</b>	36 41.3	Lighted occasionally .....	..	..	..	1851
One fixed bright light	23 3.5					
<b>Spezia Island</b>	37 15.6	Near N.E. point of the island, in the Gulf of Nauplia .....	..	93	10	....
One fixed bright light	23 10.3					
<b>Poros Island</b>	37 31.7	On the North coast of the island .....	4a	96	13	1870
One bright fixed light	23 25.7					
<b>Elgina Island</b>	37 44.5	S.E. elbow of N. mole of the harbour, on W. side of the island .....	..	17	4	....
One fixed bright light	23 25.5					
<b>Plaka Cape</b>	37 45.7	Building .....	..	..	..	....
Light building	23 25.3					
<b>ATHENS</b>						
<b>Cape Themistocles</b>	37 55.8	Bright lt. 18 ft. above red lt., at 27 yds. within extreme of cape .....	..	43	6	1859
Two fixed lights	23 37.7					
<b>Firaeus</b>	37 56.2	Red lt. on N. mole; bright lt. on S. mole; 72 yards apart .....	..	20	3	1839
Two fixed lights	23 38.2					
<b>LIPSO ISLAND</b>	37 56.4	Grey stone tower, 46 ft. high, on N.E. pt. Fixed lt., with flash of 10 secs. duration ev. 2 min. ....	4b	185	17	1865
One fixed & flash. lt.	23 35.7					
<b>Negropont Canal</b>						
<b>Berdouan Island</b>	38 11.1	Proposed on Cape Aia Marina .....	..	..	..	....
<i>Proposed light</i>	24 5.9					
<b>Bourzi Tower</b>	38 22.7	Proposed .....	..	..	..	....
<i>Proposed</i>	23 39.5					
<b>Burj Narrows</b>	.....	From mast near extreme of Western point, Burj Narrows .....	..	40	7	1878
One fixed bright lt.						
<b>ZEA</b>	37 39.5	White tower, 26 ft. high, on St. Nicolo, N. pt. of entrance. Fix. lt., with flash every min. ....	4c	108	12	1831
One fixed and flash. lt.	24 19.7					1860
<b>SYRA</b>						
1. One rev. br. lt., 1 m.	37 25.5	1. Circular tower, on W. mount of Gaidaro Island, off E. coast .....	..	105	20	1859
2. One fixed red light	24 58.8	2. On a mast at extreme of East mole works... ....	..	14	..	1859
<b>ANDROS ISLAND</b>	37 57.5	On Cape Fassa, or N.W. point, $\frac{1}{2}$ mile inland. Flash every 3 minutes. Shown westward, from S. $\frac{1}{2}$ W. to N.E. by E. $\frac{1}{2}$ E. ....	1c	696	30	1859
One fixed and flash. lt.	24 42.5					
<b>Port Gavron</b>	37 52.5	On summit of Kastri Head, West point of entrance .....	..	225	7	1874
One fixed red light	24 44.4					
<b>Strongilo Island</b>	38 48.3	White stone tower, 30 ft. high, on S. Lithada Island .....	4b	134	16	1870
One br. rev. lt., 3 min.	22 49.8					
<b>GULF OF VOLO</b>						
<b>Cape Seskla or Touzla</b>	39 22.5	On West side of entrance to anchorage .....	..	82	5	1864
One fixed red light	22 56.5					
<b>Cape Kavoula</b>	39 6.3	One mile West of Trikiri Bay, N.E. side of entrance to Gulf of Volos .....	..	85	5	1864
One fixed red light	23 3.6					
<b>GULF OF SALONIKI</b>						
<b>Kassandra Point</b>	39 57.5	White stone tower, $\frac{3}{4}$ mile from extreme of low point, E. side of entrance to the gulf .....	●	52	15	1864
One rev. br. lt., 1 m.	23 22.					
<b>Panomiti Point</b>	40 21.7	On E. side of gulf; lights vertical .....	4a	52	8	1865
Two fixed bright lts.	22 54.4					
<b>Cape Kara</b>	40 29.5	E. side of entr. to bay. Shows red to seaward, from S. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S.; br. to N. & E. Vespasian Shoal of 14 ft. lies 6 cables S.W. $\frac{1}{2}$ W. from the light .....	●	85	10	1864
One fix. br. or red lt.	22 49.7					
<b>Saloniki</b>	40 38.	Proposed light .....	..	..	..	....
<i>Proposed light</i>	22 56.					
<b>CANDIA ISLAND</b>						
<b>Canes or Khania</b>	35 30.2	White tower on extreme of mole, on E. side of port .....	●	75	10	1864
One fixed bright lt.	23 59.7					
<b>CAPE DREPANO</b>	35 27.3	White tower, 328 yards from extremity. Red flash every minute .....	●	197	15	1864
One revolving red lt.	24 14.9					
<b>Suda Islet</b>	35 27.9	In fort on South end; entrance to Suda Bay .....	●	82	5	1864
One fixed green light	24 9.5					

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## CANDIA ISLAND—(continued).

Rithymno or Retimo One fixed bright lt.	35 21.9 24 28.2	On the mole, on the N. side of entrance.....	..	50	10	1864
Candia or Megalo Kas- tron One fixed bright lt.	35 20.5 25 9.6	White tower on extremity of mole; N. side of entrance .....	..	52	10	1864
Paleo Castro Proposed light	35 12. 26 19.	Proposed .....	..	..	..	....

## RHODES

The Port One revolving light	36 27. 28 16.2	On St. Elmo tower, 82 ft. high .....	4b	82	14	1863
Cape Kumburnu One fixed red light	36 27.2 28 15.8	On Molino, or N. point of the island .....	•	52	4	1863
Kos Channel 1. One red fixed light 2. One green fixed light	36 55. 27 18.3 .....	1. Red lt. on Koum Point, N.E. point of Kos Island, on S. side of channel .....	..	59	5	1865
		2. Green lt. on point, on N. side of Kos channel	..	85	5	1865

## SAMOS ISLAND

Tigani Port One fixed bright lt.	37 41. 26 56.7	On Fonia, or Posidion Point, S.E. coast of island.....	•	72	6	1864
Vathi Port One fixed bright lt.	37 46.3 26 59.3	On Kotsik Point, at E. entrance, N.E. side of island.....	•	131	6	1863
Kalolimno Island One revol. lt., 1 min.	37 3.5 27 7.4	White stone tower, on E. extreme of the island	4b	180	10	1864
Scala Nuova One bright fixed light	37 51.5 27 16.6	On western point of the islet, at the entrance of Scala Nuova Road .....	•	98	4	1863

## KHIOS STRAIT

Spalmatori Islands One br. rev. lt., 1 m.	38 30.3 26 18.5	White tower on E. point of Pasha Island, at N. end of strait. Light shown over 247° between S.W. by S. and N.W. by N. .....	4b	246	15	1863
Paspargo Island One fixed bright lt.	38 17.9 26 12.4	White stone tower on the summit, at S. end of strait.....	4a	118	12	1863
Port Kastro Two red lights	38 22.7 26 9.2	Vertically, on the mole, N. side of entrance to port, on Khiros Island .....	..	52	4	1863

## GULF OF SMYRNA

CAPE MERMINJI One fix. red or white lt. Lower green fixed lt.	38 37. 26 40.2 .....	Octagonal white tower, 875 yds. within ex- tremity. The upper lt. bright to N.W. from W. by N. { N. to N. by W. { W. Red to S.W. from latter bearing to S. by E. { E. The green lt. in same tower, toward the Merminji Rocks, which are dangerous...	2a	230	20	1863
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Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SMYRNA</b>						
Pelican Spit Light-ves.	38 25.2	Lightvessel, painted red, off Tani Kedessi, or	•	52	4	1863
Two fixed green lights	26 58.1	Pelican Spit, on N. side. Lights vertical ...				
Sanjak Spit Light-ves.	38 25.2	Lightvessel, red, in 6 fathoms, off spit, on N. side.....	•	52	4	1863
Two fixed green lts.	27 2.1					
Sanjak Castle Spit	38 25.	On an iron staff, on a house, 48 ft. high, at the extremity of the point, on the S. side. Lts.	..	49	4	1863
Two fixed red lights	27 1.9	vertical .....				
Smyrna Harbour		From wooden posts, one on outer breakwater, the other on interior mole head .....	..	..	..	....
Two fixed red lights						
Kavala	40 55.2	On castle at extreme of town.....	..	148	8	1870
One bright fixed light	24 25.5					
Kara Aghaj Bay	40 56.3	On site of old tower on Fanar Point .....	..	72	8	1870
One fixed bright light	25 8.5					
<b>MITYLENI ISLAND</b>						
Port Mityleni						
One fixed red light	39 6.	On the fort on the point .....	..	164	6	1863
Two fixed red lights	26 34.7	On each side of entrance .....	..	23	4	1863
Skammia Point	39 23.	On a house, on the N.E. point of Mityleni.....	..	66	5	1863
One fixed red light	26 21.5					
CAPE SIGRI	39 12.8	White iron tower, 85 ft. high, on Sigri Island, off W. end of Mityleni Island .....	1b	180	24	1861
One rev. br. lt., $\frac{1}{2}$ m.	25 51.2					
ELEOS ISLAND	39 19.5	On the summit of the island on E. coast.....	3a	197	12	1863
One fixed bright lt.	26 33.2					
Sivriji Point	39 27.6	On N. coast, E. point of entrance to Sivriji Bay .....	..	82	6	1862
One fixed bright lt.	26 15.2					
TENEDOS ISLAND	39 50.	Iron tower, 49 ft. high, on Ponente or western point .....	3a	98	14	1861
One fixed bright light	25 58.3					
Gadaro	39 50.2	White iron tower, 39 ft. high, on inlet. Red flash every 2 minutes .....	4d	69	12	1861
One fixed and flash. lt.	26 6.2					
Cape Baba	39 28.5	Red light proposed.....	..	..	..	....
Proposed light	26 4.7					

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year Established.
<b>DARDANELLES.</b>						
Koun Kaleh Two fixed red lights	40 0.1 26 12.2	On W. battery, S. side of Dardanelles; vertical, a few feet apart .....	..	52	4	1856
CAPE HELLAS One rev. br. lt., 1 min.	40 2.4 26 10.8	Stone tower, 33 ft. high, on N. side of the S.W. entrance to the Dardanelles.....	2b	99	18	1856
Seddul Bahr Two green lights	40 2.3 26 12.1	On S. point of the fortress. Lights vertical...	..	52	4	1856
Khephren, or Barber's Pt. One revolving red light	40 5.3 26 22.3	White tower, 39 ft. high, on ruined battery. Red flash every $\frac{1}{2}$ minute.....	4b	59	12	1857
Kilid Bahr Two fixed green lights	40 8.7 26 22.9	Vertical; on Namaziah Fort .....	..	49	4	1858
Chanak Kaleksi Two fixed red lights	40 8.5 26 24.3	Vertical; on low battery, W. of town.....	..	59	4	1858
Nagara Point One red dashing light	40 11.4 26 24.3	On the tower; red flash every 10 secs. ....	4b	49	12	1858
Bovali Kalessi Two fixed green lights	40 12.9 26 23.2	Vertical; on fortress .....	..	46	4	1858
Peskieri Cape Two fixed red lights	40 16.7 26 46.2	Vertical .....	..	66	4	1861
Galata Two fixed green lights	40 19.5 26 34.7	Vertical; 1½ miles S. of village, near a small stream .....	..	49	4	1858
Dardanelles Guard-ship Three fixed lights	.....	Now moored off Lampsaco; painted yellow; red lt. on mast, and white light at each end of yard-arm .....	..	..	..	1872
Chardakh, or Toherdak Two fixed red lights	40 23. 26 40.9	Vertical; on low sandy point.....	..	49	4	1858
GALLIPOLI One rev. br. lt., $\frac{1}{2}$ min.	40 24.3 26 39.4	White stone tower, 39 ft. high, on W. shore, at N.E. entrance to the Dardanelles.....	●	115	18	1856
Fanar Point One fixed bright light	40 24. 26 44.3	E. shore of Dardanelles .....	..	..	..	....

**SEA OF MARMORA.**

Kutali Road One fixed bright light	40 30.6 27 28.1	On rock, between Kutali and Areblar Island...	5a	49	10	1861
Palio Port Two fixed red lights	40 29.4 27 40.7	Vertical; W. point of Artaki Peninsula, N. entrance to Rhoda Channel .....	..	138	5	1861
Marmora Island One fixed and flash. lt.	40 37.7 27 45.5	Square stone tower, 29 ft. high, on Fanar Island, off E. point of Marmora Island. Red flash every 2 minutes .....	●	132	12	1857
HORA or KHORAZ PT. One fix. & flash. br. lt.	40 41.3 27 17.3	Iron tower, white, and 49 ft. high, on the summit of cape. Lt. in each $\frac{1}{2}$ min., vis. 15 secs. eclipsed 3 secs., br. flash 5 secs., & eclipsed 5 secs. ....	2b	180	20	1861
Erekli Point One fixed bright light	40 58.6 27 58.2	On West point of coast.....	4a	164	11	1861

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>STEPHANO BURUN</b> One fixed and flash. lt.	40 57.3 28 50.6	Stone tower, 65 ft. high, 1 mile N.E. of cape. Flash every 2 minutes.	3c	66   15	1857	
<b>Fanar Bay</b> One fixed bright light	40 58. 29 1.8	On S. point, E. side of entrance to Bosphorus	4a	59   10	1856	
<b>GULF OF ISMID</b>						
Dil Burnu One fixed <i>green</i> lt.	40 43.1 29 32.2	On S. point of entrance to Gulf of Ismid .....	•	40   5	1864	
Zeitin Burnu One fixed <i>red</i> light	40 43.5 29 50.2	On N. side of Gulf of Ismid .....	•	83   6	1864	
<b>CONSTANTINOPLE</b> One bright revolving lt.	41 0.5 29 0.9	White tower, 119 ft. high, on Seraglio Point. Flash every minute. Shown from W. by S. ½ S. to E. ¼ N.....	•	98   15	1858	
Skutari Two fixed <i>red</i> lights	41 1. 29 0.7	Vertical; in Leander Tower .....	..	66   4 58	1857	

**BOSPHORUS.**

<b>Top Hane</b> One fixed light	41 1.3 29 0.3	White stone tower on the reef .....	..	17   2	1855	
<b>Duimi Bank</b> Two <i>green</i> lights	41 3.1 29 2.3	Lts. vertically from a mast on a white house on the Duimi Rock .....	..	39   4	1861	
<b>Bebek</b> One bright fixed light	41 4.5 29 2.8	On end of bank .....	..	10   2	1863	
<b>Roumili Hissar</b> Two <i>green</i> lights	41 4.8 29 1.8	Lights vertically; on wall of the fortress .....	..	46   4	1861	
<b>Khandilli Point</b> Two <i>red</i> lights	41 4.2 29 3.4	Lights vertically; on the point .....	..	112   4	1861	
<b>Khanlijeh</b> Two <i>red</i> lights	41 5.9 29 4.	Lights vertically; on the point .....	..	92   4	1861	
<b>Yeni Kesi Lightvessel</b> Three <i>green</i> lights	41 7.2 29 4.4	Lights in triangle; on edge of the bank, in 7 fathoms .....	..	46   4	1861	
<b>Umur Banks Lightvessel</b> Three fixed <i>red</i> lights	41 9.3 29 4.7	W. part; lights in triangle. In 7½ fathoms, on W. edge of the bank .....	..	46   4	1861	
<b>Therapia</b> Two <i>green</i> lights	41 8.6 29 3.	Vertically, on a point near S.E. end of Kiritch Burnu battery, a mile N.W. from Therapia	..	46   4	1861	
<b>Kavak Point</b> Two <i>red</i> lights	41 10.5 29 5.1	Vertically; in fort .....	..	46   4	1861	

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BLACK SEA.</b>						
<b>ROUMILI</b> One fixed bright light	41 14.2 29 6.7	White stone tower, 99 ft. high, on European side of mouth of Bosphorus .....	3a	190	15	1830 1856
<b>ANATOLIA</b> One fixed and flash. lt.	41 12.8 29 9.2	White stone tower, 65 ft. high, on Asiatic side. Red flash and two bright flashes every 2 minutes .....	3c	249	20	1830 1856
<b>BOSPHORUS LT.-VES.</b> Two bright fixed lights	41 27.5 29 16.5	Two masts; in 55 fathoms, at 15 miles N.N.E. $\frac{1}{2}$ E. of the entrance .....	..	28 38	9	1869
<b>KARA BURNU</b> One bright flashing lt.	41 21.3 28 2.	Tower, red and white bands, 27 feet high, on the cape. Rocket and Lifeboat station .....	1e	302	27	1856
<b>CAPE KURI</b> One fixed lt., with flash	41 52.5 28 4.3	White tower, near extremity of cape. The lt. shows a flash every 2 minutes .....	..	174	15	1866
Burghaz Bay Two fixed bright lights	42 27.9 27 35.6	Lights vertical; on Anastasia Islet, S. side of bay .....	●	131	8	1863
Varna Bay One fixed bright light	43 10. 27 58.6	White stone tower, on Cape Galata, S. point of entrance .....	4a	164	10	1863
Varna One red light	43 11.7 27 58.3	On wall of the town .....	●	49	4	1863
<b>CAPE KALIAKRA</b> One br. rev. lt., 1 min.	43 21.5 28 30.2	White tower, near extremity of Cape Kaliakra .....	..	164	16	1866
<b>CAPE SHABLAH</b> One fixed bright light	43 33.3 28 38.7	In beacon tower, 82 ft. high, on the hill above the cape .....	4a	82	12	1866
<b>CAPE KUSTENJEH</b> One fixed bright light	44 10.3 28 39.2	White tower, 45 ft. high, on the cape .....	4a	68	9	1860
<b>DANUBE RIVER</b>						
St. George's Mouth One rev. lt., 1 min.	44 51.1 29 36.9	Wooden tower, 64 ft. high, on S. end of Olinka or Sandy Island. Flashes alternately red and white .....	4b	65	10	1865
Sulina Mouth One fixed bright lt. One red fixed light	45 10.7 29 40.7	Circular white tower, 58 ft. high, on S. side of Sulina, or middle entrance .....	2a	69	15	1866
		Red light on East extremity of North pier-head .....	●	43	6	1862
<b>FIDONISI</b> One rev. br. lt., $\frac{1}{2}$ min.	45 15.5 30 10.2	White tower, 70 ft. high, on summit of Fidonisi, or Serpent Island, 24 miles E. $\frac{1}{2}$ N. from Sulina mouth of the Danube .....	2b	195	18	1846 1856
<b>Dniester River</b> One red, one bright lt.	46 4.7 30 29.2	Tsarigrad mouth. Red light from moveable beacon seaward of br. lt. In line show entr. .....	..	47 23	7 5	1876
<b>ODESSA</b>						
<b>CAPE FONTANA</b> One fixed bright lt.	46 22.6 30 45.5	White tower, 76 ft. high, about 2 leagues S. of town .....	1a	200	16	1834 1861
<b>Richelieuiski Mole</b> One fixed bright lt.	46 29.8 30 44.	Iron lighthouse, painted white, on the Military Mole. A reflected lt. from this is shown from the end of the Potapovski Mole .....	4a	31	6	1868
<b>Quarantine Mole</b> One fix. lt., red flash. One fixed red light	46 29.5 30 46.5	On a moveable iron stand, 30 ft. high. Bright light, with red flash every minute. Yellow flag by day .....	4c	44	8	1834 1864 1874
		From stand at end of mole, in fine weather only ..	..	22	5	

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Mile.	Year established.
Berezan Two bright fixed lights	46 38.2 31 23.5	One on a pyramid, 52 ft. high; on the W. side of the Berezan Lake. In one they bear N.W. & W., 882 yds. apart. Not shown in winter .....	●	78 23	10 8	1862
Kherson Bay One br. & green fix. lt.	46 37.5 31 29.2	On Mount Souvoroski, or Potemkin Hill. Green except to S.W., between S. by W. & W. and S.W. & W., where it is bright .....	●	148 .....	14	1868
Adjigiol Lightvessel Three fixed lights	46 35.5 31 12.5	Lightvessel, black with blue band, in 22 ft., at end of shoal. Lights triangularly Fog Bell	●	43 36	8	1862
Adjigiol Leading Lights One red, one bright lt.	.....	Near the telegraph. Western lt. red; eastern bright. In one, E. by N. & N., 1,380 yds. apart, they lead up .....	●	112 170	12 15	1866
<b>BUG RIVER</b>						
Sviatotroitski One red fixed light	46 45.5 31 55.	On piles, 30 ft. high, on Russian Spit, E. bank. Shown from S. to S. by W. ....	5a	34	7	1865
Voloisk One bright fixed lt.	46 44.5 31 53.7	From a house on West bank. Shown from S.E. by E. & E. to E. by S. & S. ....	4a	70	10	1865
Sievers Spit One bright, one red lt.	46 55.5 32 0.2	Bright lt. on the E. side of the river. Red lt. 818 yards to N.E. & N. In one they lead through the channel .....	4a ..	30 55	6 8	1866
Nikolaev One red fixed light	46 57. 31 59.5	Near the landing-stage, S. side of the town ...	6a	47	7	1865
Fort Constantine Two bright fixed lts.	46 54. 31 59.5	One on the piles of the fort; the other on the E. bank opposite .....	6a	29 55	6 8	1865
<b>TENDRA PENINSULA</b> One rev. br. lt., 1 min.	46 19.4 31 30.5	Stone tower, 79 ft. high, 3 miles from N. end, and 13½ miles S. & W. from Kinburn fortress Fog Bell	2b	96 .....	11	1827 1864
<b>TARKAN CAPE</b> One fixed bright light	45 20.8 32 30.5	White stone tower, 113 ft. high, on S.W. extremity .....	1a	117	12	1862
Eupatoria One revolving lt., 1 m.	45 9. 33 16.5	Flash every minute; red and white alternately	4c	52	8	1861
<b>CAPE KHERSONESE</b> One br. rev. lt., 1 min.	44 35. 33 21.2	White tower, 118 ft. high, at entr. to Sebastopol. (Apparatus und. repair, Dec. 1878.)...	1b	108 .....	12	1846 1863
<b>SEVASTOPOL</b> Two bright fixed lights	44 37.2 33 33.7	One on high cape, near Inkerman; the other at head of harbour, near Mount Mekenzieff. In one, E. by S., 1½ mile apart, lead up the harbour; only shown in that direction .....	● ●	305 629	20 29	1847
<b>AITODOR CAPE</b> One fixed bright light	44 25.4 34 6.1	Tower, 38 ft. high, on the cape .....	●	343	20	1835
Yalta One fixed red light	44 29.7 34 8.5	On Killisi Point; Temporary lt.; visible between S.W. by W. and East .....	..	45	8	1874
<b>STRAIT OF KERTCH</b>						
KYZ AUL POINT One fix. br. & green lt.	45 3.7 36 22.4	W. side Kertch Strait. Black & white striped tower, 79 ft. high. Lt. br. from E. to S.W. by W. & W.; green over Ilchan Kal Rocks from S.W. by W. & W. to W. by S. & S.; green over Kishla Reef and Hig. Ayer Rock from E. to E. by N. & N. ....	1a	203	20	1876
Kertch Strait Lt.-Ves. One fixed bright lt.	45 15. 36 29.3	Moored in 15 ft. water at Black Sea entrance. Pass to westward .....	●	...	4	1872
Ambelaki Bay One red, one br. lt.	45 16.8 36 26.2	Red lt. on edge of cliff at Kamissa. Bright lt. at Tschurnash, 5 miles W.S.W. of Kamissa lt. In one, lead between Tsch. Bank and shoal of Ak-burnu .....	.. ..	102 344	11 21	1873
<b>CAPE PAUL</b> One fixed bright lt.	45 18.2 36 29.7	Red iron tower on W. side of strait; visible betw. S.S.E. & E. and S. & E. Kept in s.gut while passing through eastern green sector of Kyz Aul Point light; clears dangers off Cape Takli and Kishla Point .....	3a	73	10	1864
Kertch One fixed red light	45 21. 36 30.	Red iron tower, 80 ft. high, on town wharf, near the church. Lt. shown from S.E. & E. to E.S.E. ....	4a	36	7	1863

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Visible in Miles.	Year Established
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## BLACK SEA (S. &amp; E. Coasts).

<b>KILI CAPE</b> One rev. br. lt., 1 min.	41 10. 29 38.2	Light red stone tower, 49 ft. high, on the cape. Lifeboat and rocket station.....	1b	221	20   1859
<b>Bender Ereki</b> One fixed bright light	41 18.1 31 25.8	White tower, 60 ft. high, on a hill, half a mile N. of Cape Baba. (Uncertain.) .....	5a	656	12   1854
<b>Port Amastra</b> (One fixed red light	41 45.3 32 24.8	Stone tower on the summit of the extremity of the peninsula .....	●	312	10   1863
<b>Cape Ineboli</b> Two fixed lights	41 58.5 33 45.2	Lts. vertical, on a mast; on summit on E. end of the cape .....	●	85	4   1863
<b>CAPE INJEH</b> One br. rev. lt., 1 min.	42 6.5 34 57.8	Stone tower near extremity of cape.....	4b	92	13   1863
<b>Sinub, or Sinope</b> One fixed red light	42 1.3 35 13.5	White stone tower halfway up Boztepeh Point; rock to E. $\frac{1}{2}$ N. .....	4a	344	8   1863
<b>Samsoun Bay</b> One fixed bright light	41 18.9 36 21.3	On Kaliot Point, W. side of bay .....	●	56	10   1863
<b>Kerasunda Point</b> Two fixed bright lights	40 56.3 38 23.6	Lights vertical; on a mast on a white house, at extreme end of town .....	●	194	6   1863
<b>Trebizond</b> One fixed bright light	41 1. 39 46.4	White tower, 20 ft. high, on battery on Kal- mek Point .....	●	105	10   1861
<b>Batoum Bay</b> Two fixed bright lights	41 39.5 41 36.2	Lights vertical; on low point, W. side of bay	●	49	6   1863
<b>POTI</b> 1. One flash. lt., 1 min. 2. One red, one bright beacon light	42 9.1 41 36.7 .....	1. White iron tower on the point. Flashes bright and red alternately .....	2b	118	17   1864
		2. At entrance of S. branch of Rion River. Red lt. on inner, bright lt. on outer beacon. In one, show the channel. Not lighted when the bar is unsafe.....	..	10 17	..   1868
<b>SOUKHOUM POINT</b> One br. rev. lt., 1 min.	42 58.5 40 57.	Circular iron tower, 102 ft. long, on the point, near Soukhoum Kaleh, Coast of Circassia.....	2a	121	17   1864
<b>CHARDAK POINT</b> One fixed bright light	44 6. 39 1.2	Temporary lt. on Kadoseh or Chardak Point, W. point of Touabs Bay .....	..	230	18   1874
<b>SEA OF AZOF.</b>					
<b>YENI KALEH</b> One rev. br. lt., $\frac{1}{2}$ min.	45 23.3 36 38.3	Circular tower, 82 ft. high, on Cape Fansar, N.W. entr. of Kerch Strait, $2\frac{1}{2}$ miles from fortress. Shown eastward, from N.N.W. to S.W. $\frac{1}{2}$ S.; but pending completion of Pana- ghia lt.-ho., it shows betw. N.N.W. & S.S.W.	1b	409	25   1861
<b>Berdianak</b> 1. One rev. br. lt., 1 m. 2. One red, one green lt.	46 38.5 36 46.2 .....	1. White and red tower, 72 ft. high, 600 yds. E.N.E. $\frac{1}{2}$ E. from end of spit .....	●	79	10   1860
		2. A green lt. at N.W. end; red lt. at S.E. end of breakwater .....	●	17	4   1866
<b>Bielosarai</b> One fixed bright light	46 53.2 37 19.9	White tower, 66 ft. high, on Sandy Neck, 2,400 yds. from end of spit .....	●	74	10   1847 1856
<b>Sazalnitz Lightvessel</b> Two fixed bright lights	46 59.3 38 13.8	Lts. vertical, on mizenmast; on S. side of channel, in 20 ft.; end of spit. Removed, in winter, to Taganrog.....	●	34 22	8   1856 7
<b>Begliskaiia, or Golden Bank Lightvessel</b> Two red fixed lights	47 1.4 38 35.8	Lts. vertical, on mizenmast; red ball at main Fog-bell .....	●	46 36	12   1856 11   1859
<b>Taganrog</b> <i>Proposed Lightvessel</i>	47 11. 38 56.	Proposed lightvessel at entrance to River Don	..	..	..   ..   ..   ..
<i>Lighthouses.</i>					

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## ASIA MINOR (South Coast).

<b>Adalia</b> One bright fixed light	36 52. 30 45.5	Two-thirds of a mile E. of the harbour .....	..	131	8	1869
<b>LISSAN EL KAHBEH</b> Two fixed bright lights	36 14.5 34 1.7	Tower on low sandy point. Lts. vertical .....	●	49	8	1864
<b>MERSINA or MERSYN</b> One fixed and flash. lt.	36 45.8 34 40.7	White stone tower, $\frac{1}{2}$ a mile to S.W. of the town. Fixed lt., with flash every 3 minutes	40	53	14	1864
<b>Kara-dash Burnu</b> One fixed bright light	36 32 6 35 21.3	White stone tower on the point, W. side of Gulf of Iskenderun .....	●	131	8	1864

## SYRIA.

<b>Alexandretta</b> Two fixed bright lights	36 35.5 36 10.3	Vertically, on a mast; Iskenderun Gulf, W. point of road .....	●	49	8	1864
<b>Ras Ibn Hani</b> One br. rev. lt., 1 min.	35 35. 35 43.7	White stone tower on point, 5 miles W. of Latakiyah.....	..	46	13	1864
<b>Latakiyah</b> One fixed red light	35 30.5 35 46.5	White tower on N. side of old castle .....	..	49	5	1864
<b>Tripoli</b>						
1. One bright fixed lt. 2. One red fixed light	34 29.4 35 44.3	1. On a house in the middle of Ramkine, or Bluff Island..... 2. On lighthouse office, near lazaret .....	● ..	56 39	10 5	1864 1869
<b>BEIRUT</b>						
1. One rev. br. lt., 1 m. 2. One fixed red light	34 54.2 35 28.4	1. White stone tower, 437 yds. within the cape 2. On a white house, at the Port el Allah .....	4b ●	125 59	13 4	1863 1863
<b>Saldon or Sidon</b> Two red fixed lights	33 34.2 35 24.7	Vertically; on the S. end of the Jezireh, or islet, at the entrance.....	..	62	5	1866
<b>Sur or Tyre</b> Two fixed bright lights	33 17. 35 14.8	Vertically; on an old battery, on W. side of the town .....	..	56	8	1866
<b>Acre or Akka</b> One fixed red light	32 54.6 35 8.	White tower on ramparts, W. of town .....	●	46	10	1864
<b>Haifa or Khaifa</b> Two fixed bright lights	32 47.6 35 5.	Vertically; on old castle, to the right of the Sanitaire .....	..	66	8	1864
<b>MOUNT CARMEL</b> One fixed and flash. lt.	32 48. 35 2.	Tower, on terrace of ancient castle, below the monastery. A flash every 2 minutes .....	30	656	18	1864
<b>YAFFA or JAFFA</b> One revolving lt., 1 m.	32 3.2 34 44.6	White tower in S.W. part of town, near the beach. Flashes alternately red and bright .....	4b	69	14	1862 1864
<b>CYPRUS ISLAND</b>						
<b>CAPE GATA</b> One fixed & flash. lt.	34 33.7 33 2.5	White stone tower on the summit of the cape. Flash every 2 minutes .....	..	190	15	1864
<b>Cape Kiti</b> One fixed bright lt.	34 48. 33 36.8	On a house near the cape, on S. side of island, 6 miles S. of Larnaka .....	●	92	8	1864
<b>Larnaka</b> One fixed red light	34 55. 33 38.9	At end of town, 165 yds. from the Lazaret ...	●	46	5	1864

Name and Character of Light.	Lat. N. Long. E. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>EGYPT.</b>						
<b>PORT SAID</b>	31 15.6	1. A light gray tower at beginning of West breakwater. An ELECTRIC LIGHT, flashing every 3 seconds .....	1b	180	20	1860
1. One br. flashing lt.	32 19.3	2. A red lt. shown from W. breakwater head, and a green lt. from E. breakwater. Floating lts. are shown, red on the western, and green on the eastern side of the channel .....				1869
<b>RIVER NILE</b>						
<b>DAMIETTA</b>	31 31.5	On three columns, painted in black and white bands .....	2b	176	18	1870
One br. rev. lt., 1 m.	31 51.					
<b>BRULOS</b>	31 36.	On three columns, painted red, black, and white .....	1a	176	18	1870
One bright fixed lt.	31 9.					
<b>ROSETTA</b>	31 29.5	On three white iron columns; flashes red and white alternately ..	2b	176	18	1870
One revol. lt., 5 secs.	30 19.					
<b>ALEXANDRIA</b>	31 11.1	1. White stone tower, on Eunostos Point. Flash ev. 20 secs. By report, ev. 6 secs. ...	..	120	20	1848
1. One revol. bright lt.	29 52.4	2. At S.W. end of new breakwater .....	..	..	..	....
<b>ALMAIDA</b>	30 51.	Iron pillars, painted gray, in Arabs Gulf. A spring of fresh water near .....	1a	187	22	1872
One fixed bright light	29 11.2					
<b>TRIPOLL.</b>						
Dernah <i>Proposed</i>	32 45.	Fixed light proposed .....	..	..	..	....
	22 40.1					
Benghazi <i>Proposed</i>	32 9.	Fixed light proposed .....	..	..	..	....
	20 1.2					
Tripoli <i>Proposed</i>	32 54.	Fixed light proposed .....	..	..	..	....
	13 12.					
<b>TUNIS.</b>						
<b>CAPE BON</b>	37 4.7	White stone tower, 75 ft. high, $\frac{1}{2}$ mile from extr. of cape. The lt. is vis. for 5 secs. ev. $\frac{1}{2}$ min. betw. S.E. and W. by S. except where Zembra Island intervenes from W.N.W. to N.W. by W. & W. ....	1b	412	25	1875
Red rev. lt. $1\frac{1}{2}$ min.	11 3.3					
By report every min.						
<b>CAPE CARTHAGE</b>	36 51.9	Tunis Gulf .....	..	482	26	1840
One rev. br. lt., 1 min.	10 18.7					
<b>Goletta</b>	36 48.6	On end of eastern jetty .....	4a	39	6	1850
One fixed red light	10 18.6					1862
<b>I CANI, AL KHELB, or DOG ROCKS</b>	37 21.	White tower, 70 ft. high, on summit of highest rock. Light uncertain .....	2a	129	17	1860
One fixed bright light	10 4.6					
<b>ALGIER.</b>						
Port Cala, or Al Kalah	36 54.5	On E. side of entrance .....	4a	62	10	1862
One fixed red light	8 26.3					
<b>CAPE ROSA</b>	36 57.3	Stone tower on square building on the cape ...	4a	418	12	1869
One bright fixed light	8 13.9					
<b>Bonah</b>	36 54.5	1. On Lion Point, $\frac{1}{2}$ mile N.E. of Fort Cicogne	4a	133	10	1841
1. One fixed bright lt.	7 46.4	2. Red lt. on N. jetty head (not shown in bad weather). Green lt. on S. jetty head. Also two yellow lts. at entrance of basin within the port .....	..	..	..	....
2. One red, one green lt.	.....	3. Small light on Fort Geno .....	..	..	..	....
3. One fixed light	.....					

Name and Character of Light.	Lat. N. Long. E. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>HAMBRAH, or CAPE DE GARDE</b> One rev. br. lt., $\frac{1}{2}$ min.	36 58.1 7 46.8	Lighthouse, 43 ft. high, at the entrance to the Gulf of Bona .....	●	427	15	1841
<b>CAPE FERBO, or RAS HADID</b> One revolving light	37 4.8 7 11.8	Stone tower, 58 ft. high, on Cape Ferbo, or Ras Hadid. Flashes alternately red and bright every 30 secs.....	3b	218	20	1869
<b>Stora Gulf</b>						
<b>Singes Island</b> One fixed bright lt.	36 54.3 6 53.4	On a battery on the island E. of Stora .....	●	52	8	....
<b>Srigina Island</b> One fixed bright lt.	36 56.3 6 53.5	On the W. side of the gulf .....	4a	180	10	....
<b>Philippeville</b> Two fixed red lights.	36 52.9 6 56.5	One on Chateau Vert Point, W. of the town; shows betw. the head of large jetty and the dangers on W. side of bay; the other, or Skiddah lt., near Zouave barracks; shows over 16° from large jetty-head towards land	● ●	126 257	6 6	1874
<b>EL DJERDA</b> One fixed bright light, with green flash, 2 m.	37 1.4 6 32.4	White tower, 37 ft. high, on N.E. extreme entrance of Gulf of Collo or Kola.....	4c	84	12	1863
<b>Collo, or Kola</b> One red fixed light	37 0.6 6 31.5	On S. side of entrance to the port.....	●	33	4	1862
<b>CAPE BOUGIARONI</b> One bright fixed light	37 5.1 6 29.9	Stone tower, 48 ft. high, on the cape .....	1a	564	31	1869
<b>Jijelli</b> One fixed bright light	36 50. 5 43.9	Lighthouse, 47 ft. high, on second rock from E. ....	●	49	8	1844
<b>CAPE AFIA</b> One bright flashing lt.	36 49.1 5 42.8	Stone tower on cape. Flash every 5 seconds	..	138	19	1871
<b>Bougie or Bujeya</b> One fixed red light	36 45.6 5 4.3	Light shown from end of pier .....	●	23	3	1854 1875
<b>Bouac Cape</b> One bright fixed light	36 46. 5 5.1	On fort, at 1 mile N.E. $\frac{1}{4}$ E. of Bougie .....	●	482	15	1854
<b>CAKBON CAPE</b> One rev. br. lt., 1 min.	36 46.8 5 5.1	Tower, 35 ft. high, on cape.....	1b	722	27	1851
<b>CAPE BENGUT</b> Building	36 57. 3 56.	White tower, 86 ft. high, building; for fixed light .....	1a	197	20	....
<b>Dellis Point</b> One fixed red light	36 55.5 3 55.8	On the extremity of the point .....	●	...	15	1844
<b>CAPE MATIFOU</b> One bright fixed light	36 48.7 3 14.9	Stone tower, 42 ft. high, on the cape, $8\frac{1}{2}$ miles E. of Algier lt. .....	4a	242	10	1868
<b>ALGIER</b>						
<b>IT. DE LA MARINE</b> 1. One fixed br. lt. 2. One red, 1 green lt.	36 47.3 3 4.3 .....	1. White tower .. 2. Red lt. on N. mole head. Green lt. on S. mole head, obscured from line of red lt. to bell buoy at end of works .....	4a 4a	115 44	15 9	1834 1869 1868
<b>CAPE CAXINE</b> One br. rev. lt., $\frac{1}{2}$ min.	36 48.7 2 58.7	Stone tower, 144 ft. high, on the cape.....	1b	210	25	1868
<b>Tipaza</b> One fixed light	36 36. 2 26.3	Stone tower, 40 ft. high, on Point Ras el Kalia, 12 miles E. of Shershel light. (Officially described as a green lt., but reported to show as a bright lt., visible 16 miles off) .....	4a	102	4	1869

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SHERSHEL</b>	36 36.8 2 11.9	1. High lt. on Fort Joinville; the other on pier 2. On end of E. quay. (Temporarily discontinued, 1878)	3a ● ●	124 25 15	15	1855 1861 ....
<b>CAPE TENES</b>	36 33.1 1 20.8	Square tower, 85 ft. high, $\frac{1}{2}$ miles N. of Ténés, or Tenes	1b	292	27	1865
Tenes	36 31. 1 18.8	In front of the town	●	131	8	1844
<b>CAPE IVI</b>	36 5.2 0 13.3	Stone tower, 76 ft. high, halfway on the fall of the cape. Lt. flashes every 4 secs.	1c	389	26	1870
Mostaghanem	35 56.2 0 4.5	On small tower, 29 ft. high, near barracks	4a	121	10	1814 1869
Arzew	35 51.6 0 17.2	Long. W. Lower red light on the jetty extremity; and higher lt. on islet	4a 4a	25 66	8 10	1861 1861
<b>ORAN</b>	35 44.3 0 41.3 .....	1. Octagonal tower, 76 ft. high, on Fort Mars-el-Kebir 2. Green lt. at new port; red lt. at old port	4a ●	118 25 3	9	1868 1866
<b>CAPE FALCON</b>	35 46.4 0 47.3	Octagonal white tower, 86 ft. high, on the cape	1b	340	25	1868
<b>CAPE DJAUMEL</b>	35 43. 0 57.	Building, to show a revolving lt. every $\frac{1}{2}$ min.	1b	...	...	....
<b>HABIBAS ISLANDS</b>	35 45. 1 8.	Building, to show a fixed lt. with flashes	2c	...	...	....
<b>RASCHGOUM ISLAND</b>	35 19.8 1 28.8	Stone tower, 60 ft. high, on N. point. Flashes red and bright alternately	2b	267	22	1870
Nemours	35 6.4 1 52.8	Tower, 44 ft. high, on the W. point of the bay	4a	305	10	1868
Djama Ghazouat Bay	35 7. 1 52.3	On the E. point of the bay	●	276	8	1848
Zafarine Island <i>Proposed</i>	35 11. 2 26.	Proposed light	3	...	...	....

**MAROCCO.**

<b>Melilla</b>	35 17.9 2 59.	Building	On bastion, N.E. of village	3	...	...	....
<b>Alhucemas</b>	35 14.7 3 47.2	One fixed light	On Torre Vigia, or look-out tower in the fort. Bad light	●	123	7	1853
<b>Velez de Penon de la Gomera</b>	35 11. 4 16.	One fixed red light	On the Penon, to N.W. of the town	..	262	9	1874
<b>CEUTA</b>	35 53.7 5 17.3	One rev. br. lt., 1 min.	Tower, 48 ft. high, on Mo-queros Hill, or Almina Point. (Reported to revolve ev. $\frac{1}{2}$ min., 1878)	1b	483	23	1855
<b>Tangier</b>	35 47. 5 48.5	1. One revolving light 2. One fixed red light	1. (Uncertain). 2. On wooden landing-stage near Custom-house	..	...	...	1867 1877
<b>CAPE SPARTEL</b>	35 47.2 5 55.7	One fixed bright light	On the S.W. point of entrance to Gibraltar Straits	1a	312	21	1864

Name and Character of Light.	Lat. N. Long. W. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## ATLANTIC ISLANDS.

<b>MADEIRA</b> One bright fixed light, with flashes	32 43.2 16 39.5	Tower, 41 ft. high, on Fora Island, Sao Lourenzo, or E. point. Flashes every $\frac{1}{2}$ minute	2c	343	25	1870
<b>Funchal</b> One fixed red light	32 37.7 16 55.3	On the fort, on the Ilheo or Loo Rock .....	5a	112	8	1866
<b>CANARY ISLES</b>						
<b>TENERIFE</b>						
<b>Santa Cruz</b> 1. One fixed red lt. 2. One fixed br. lt.	28 28.5 16 14.9	1. Red light on mole head ..... 2. Bright light near extremity of mole .....	● 6a	26 38	5 9	1857 1863
<b>ROQUE BERMEJO PT.</b> One fixed & flash, lt.	28 35.2 16 8.1	Grey tower, 39 ft. high, on Anaga Cape, E. extreme of Tenerife; bright flash every 3 minutes.....	1c	810	35	1864
<b>GRAN CANARIA</b> 1. One fix. & flash lt. 2. One fixed red lt.	28 11. 15 25.3 .....	1. Tower, 30 ft. high, on N.E. part of Ialeta Peninsula. Red flash every 2 minutes ..... 2. Red lt. on mole, Palma Town .....	3c ..	817 ..	20 5	1865 1869
<b>Lobos Islet</b> One fixed red light	28 45.4 13 49.1	On Martino Point, on N. side of islet .....	6a	95	9	1865
<b>ALEGREANZA ISLAND</b> One bright revol. lt.	29 23.8 13 29.6	Grey tower, 49 ft. high, on Delgado Point, E. side of island. Flashes every $\frac{1}{2}$ min. Shown seaward, from N.N.W. $\frac{1}{2}$ W. to S.W. by W. $\frac{1}{2}$ W. The Grigio Bank extends 1 mile to S.W. .....	4b	57	13	1866
<b>LANZAROTE</b> One bright fixed lt.	28 50.9 13 52.2	Grey tower, 31 ft. high, on Pechiguera Point, S.W. extreme of island .....	4a	51	12	1866
<b>Port Nasos</b> Two fixed red lts.	28 57.4 12 32.9	On E. side of Lanzarote, 125 yds. apart. In one lead in through narrow channel .....	a	47	7	1866
<b>FUERTEVENTURA</b> One rev. br. lt., 1 m.	28 3. 14 31.4	Grey tower, 62 ft. high, on Jandia Point, S.W. extreme of island. Shown seaward, from N.N.E. $\frac{1}{2}$ E. to S.E. by E. $\frac{1}{2}$ E. .....	3b	108	15	1866
<b>PALMA</b> One rev. br. lt., 1 m.	28 50.1 17 46.9	Tower, 112 ft. high, on Cumpilda, or N.E. point of Palma Island .....	2b	207	25	1866
<b>AZORES</b>						
<b>Ponta Delgada</b> 1. One fixed red lt. 2. Two bright fix. lts.	37 44. 24 41.2	St. Michael's Id. 1. Shown from tower, 26 ft. high, situated 200 yds. within extr. of breakwater in progress ..... 2. One on Custom-house; one on breakwater, now constructing .....	4a .. ..	47 20 ..	9 5 3	1878 1874 ....
<b>Arnel Point</b> One fix. & flash, br. lt. every 2 min.	37 49.3 25 8.5	Tower and keeper's dwelling on N.E. coast of St. Michael Island. Flashes vis. 25 miles off through arc of $240^{\circ}$ .....	2c	222	18	1876
<b>CAPE VERDE ISLANDS</b>						
<b>Porto Praya</b> 1. One fixed br. lt. 2. One fixed red lt. 3. One fixed red lt.	.....	St. Jago. 1. A fix. br. lt. on Quail Id., S. pt. 2. A fixed red lt. on Quail Island, N. pt. .... 3. At new landing place, Porto Praya..... (These lights are private property, and not to be depended on.)	.. .. ..	85 65 ..	6 2 ....	....
<b>BERMUDA ISLAND</b> One rev. br. lt., 1 min.	32 15.1 64 51.6	A white iron tower, 106 ft. high, on Gibbs Hill, on S. side. Seen all round, except where hidden by the hills to the eastward, from N.E. $\frac{1}{2}$ E. to N.E. $\frac{1}{2}$ E., and from N.E. by E. to N.E. by E. $\frac{1}{2}$ E. ....	●	362	24	1846

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>AFRICA (West Coast).</b>						
Senegal One fixed bright light	16 0.8 16 31.	French.] On the Government house, Ile de St. Louis .....	..   ..	6	1843	
Almadie Point One fixed red light	14 45.1 17 32.1	French.] Square white tower, 39 ft. high, on western rise of point, 2 miles N.W. of W. from Cape Verde light .....	4a   85	8	1866	
CAPE VERDE One br. rev. lt., $\frac{1}{2}$ min.	14 43.5 17 32.4	French.] Square white tower, 65 ft. high, on the western mound of Cape Verde.....	..   370	27	1866	
Cape Manuel One fixed red light	14 38.9 17 28.5	French.] Square white tower, 39 ft. high, on W. part of Gorée Bay, 6 miles S.S.E. from Cape Verde light .....	4a   170	8	1866	
Dakar Harbour One fixed bright light	.....	French.] From iron pillar at extr. of E. pier. Small red light for mail steamer .....	..   15	4	1876	
Gorée Island One fixed bright light	14 39.9 17 24.5	French.] In the fort, on the summit of the island.....	a   ..	6	1843	
SIERRA LEONE	8 30.	British.] White tower, 47 ft. high, on the cape. Is red over middle ground. ....	..   69	15	1849	
One fixed light	13 18.5	.....	..   ..	..	1863	
One green light	.....	Small lt. on Government landing-place .....	..   ..   ..	..		
MONROVIA One fixed bright light	6 19. 10 50.0	Liberian.] Red tower, 40 feet high, on Cape Mesurado. Said to be out of repair, and uncertain lt. shown from flagstaff .....	..   ..   ..	..	1855	
CAPE PALMAS One fixed bright light	7 22.1 7 44.3	Liberian.] Tower, 50 feet high, on the cape. Bad lt., visible 2 to 3 miles, and uncertain. Great caution required.....	..   ..   ..	..	1847	
CAPE THREE POINTS	.....	A lt.-ho. to show 3rd order fix. M. proposed...	..   ..   ..	..	....	
CAPE COAST CASTLE One fixed bright light	5 6.3 1 13.9	British.] White tower, 46 ft. high, in Fort William.....	..   192	12	1835	
ACORA One bright fixed light	5 31.8 0 11.5	Red tower on western bastion of Fort James	3a   50	12	1871	
Lagos	Long. E.					
One fixed red light	6 26. 3 27.	Temporary. On beach, East of lagoon. Light- house to be erected .....	a   47	7	1877	
Fernando Po One bright fixed light	3 45.6 8 47.0	On Fernanda (or William) Point, N.E. extremity of Isabel Bay .....	..   ..	5	1866	
St. Thomas Island One bright fixed light	0 20.5 6 42.7	Bight of Biafra. On Fort S. Sebastian, Anna de Chaves Bay .....	..   35	4	1866	
Ascension	Lat. S. Long. W.					
	7 55.3 14 25.5	Red lt. on end of pier in Clarence Bay .....	..   ..   ..	..	....	
St. Paul de Loando Lt.-V. One fixed light	Long. E. 8 44.9 13 16.2	At N.E. end of Loando Reef. Should be passed to northward .....	..   ..   ..	..	1863	
Benguela	.....	A fixed lt. is reported to be shown from fort...	..   ..   ..	5	....	

Name and Character of Light.	Lat. S. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CAPE COLONY.</b>						
<b>TABLE BAY</b>						
ROBBEN ISLAND	33 48.9	Tower, 86 ft. high, with red & white bands, on Minto Hill (highest part), on S. part of Id.	1a	154	20	1865
One fixed bright lt.	18 22.5					
GREEN POINT	33 54.1	Square tower, 52 ft. high, 400 yards from low water .....	3b	65	13	1844
One flash. lt., 10 secs.	18 24.1					1864
Mouillé Point	33 53.9	Tower, 30 ft. high, in black & white bands, on pt., 1,200 yds. E. by S. $\frac{1}{2}$ S. from Green Pt. lt.	4a	44	10	1844
One fixed red light	18 24.7					1864
Cape Town	.....	One on S. wharf, only in northerly gales; the other on E. end of breakwater. Shown eastward from N. by the E. to S. ....	6a	..	..	1801
Two fixed green lts.			..	25	..	1863
CAPE OF GOOD HOPE	34 21.2	White iron tower, 30 ft. high, on the cape. Visible all round seaward, except when hidden by Vasco de Gama Peak, betw. N.N.W. & W. and N.N.W. & W. These bearings I ad S.W. of Albatross Rock, from 1 mile to $\frac{1}{2}$ mile clear of it. A Signal-station near. Observe the distinctions betw. this and Green Point lt....	1b	816	36	1860
One rev. br. lt., 1 min.	18 29.5					
SIMON'S BAY	.....					
South Roman Rock	34 10.7	Tower, 48 ft. high, with broad red and white bands. The outer, or Castor Rock, lies N.N.E. $\frac{1}{2}$ E., $\frac{1}{2}$ cable from it. ....	3b	54	12	1845
One rev. br. lt., $\frac{1}{2}$ m.	18 27.5					1861
CAPE AGULHAS	34 49.8	Tower, 100 ft. high, white & red bands, on pt. Coming from eastward, keep outside a bearing of it of W. by N., if beyond 6 or 7 miles	1a	128	18	1848
One fixed bright light	20 0.6					
Cape St. Blaize	34 11.2	Square tower, 45 feet high, on bluff of cape. Keep the lt. in view when standing in-shore	3a	240	15	1864
One fixed red light	22 9.5					
CAPE ST. FRANCIS	34 12.5	Stone tower, 91 ft. high, 250 yds. within Seal Pt., $\frac{1}{2}$ mile W. of Cape St. Francis. Obscured by Cape St. Francis N. of $83^{\circ}$ E....	2b	118	16	1877
Flashing lt. ev. 20 secs.	24 50.3					
ALGOA BAY	.....					
CAPE RECIFE	34 1.7	Tower, 80 feet high, with four red and white bands. A red ray to clear Roman Rock. Shown between N. by E. and N.E. & N. ....	1b	93	15	1850
One rev. br. lt., 1 m.	25 42.2					
Baaken River	.....	A green light on the bridge .....	..	..	..	1869
Port Elizabeth	33 57.7	Tower, 55 ft. high, on hill behind town, near Donkin Monument. Lt. is red from S.E. to S.E. by E., thence bright to N.E. by E. Bright lt. in sight clears all dangers. A time ball here. Be cautious not to mistake this for Cape Recife lighthouse.....	6a	225	12	1861
One fixed light	25 37.					
Bird Islands	33 50.4	Stone-coloured tower, 72 ft. high. Not to be approached within 3 miles from outside.....	3a	80	10	1852
One fixed red light	26 17.2					1873
Port Alfred	33 36.1	From near the extreme of the West pier .....	..	..	6	1878
One fixed green light	26 54.2					
Buffalo River	33 1.1	East London. Red and white bands, 13 feet high, on reef, S. side of entrance .....	6a	45	12	1860
One fixed bright light	27 55.1					
PORT NATAL	29 52.8	White tower, 81 ft. high, on the bluff at the entrance .....	2b	282	24	1867
One rev. br. lt., 1 min.	31 3.6					
Light proposed		Harbour light proposed on end of wall .....	..	..	..	....
DELAGOA BAY	.....					
Cookburn Shoal	25 55.3	Lt.-ves. is moored W. by N. & N. $\frac{1}{2}$ miles from Elephant Id., and 9 cables from nearest part of Cookburn Shoal. She is painted red, carries two masts, and shows a fixed br. lt.	..	..	..	1878
	32 54.5					
Reuben Point	25 58.8	Lt.-ho. on Reuben Point, on Ponta Vermelha, N. side of entrance to English River. Visible southwards betw. N.E. by E. & E. & W. & N.	a	..	..	1877
One fixed bright lt.	32 38.4					
Inhambane River	23 45.5	White tower, on E. point of Barrow Hill, S. side of entrance. Light shown seaward to between S.E. & S. and W. by N. & N. ....	..	80	14	1873
One fixed bright light	35 33.2					
Chingani Point	20 38.2	Vis. betw. N.N.W. & E. by S. & S. on N. pt. of Chuluwan Island .....	..	86	12	1876
One fixed red light	34 54.					
RIVER QUILLIMANE	18 1.3	White iron tower on Tangalane Point, E. side of entrance. Shown seaward from S.W. by W. & W. by the South to N.E. by E. & E. ....	a	52	12	1874
One bright fixed light	37 1.5					
MOZAMBIQUE HARB.	15 2.	1. From square tower, N.E. pt. of St. George Id.	a	66	15	1876
1. One fixed br. lt.	40 49.1	2. From iron scaffold on Fort St. Sebastian. Vis. seaward betw. N.E. & N. and S.W. & S.	..	74	12	1876
2. One fixed red light		3. At Cabecira Grande. Vis. over South Channel and up harbour.....	..	35	12	1876
3. One fixed br. lt.		4. Shown on Custom-house pier .....	..	19	..	1876
4. Two green lights						
QUERIMBA IDS., Ibo Id.	12 20.	Tower of iron and wood, on the N.E. point of Ibo Island, Mozambique Channel. Shown east from S. & W. to N.W. by N. ....	a	51	12	1873
One bright fixed light	40 40.					

Name and Character of Light.	Lat. S. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description (of apparatus)	Height above H. W.	Visible in Miles.	Year established.
<b>REUNION, or BOURBON ISLAND</b>						
St. Denis Two fixed bright lts.	20 51.5 55 30.2	Vertically, 12 ft. apart; on a flagstaff on the Barachois .....	..	85	8	1846
St. Paul Bay One fixed light	20 59.8 55 19.3	Lantern on mast at landing-place .....	..	72	7	1849
BEL-AIR One fixed bright lt.	20 53.2 55 39.4	Tower, 66 ft. high, on the point, N.W. side of the island .....	2a	151	18	1846
<b>MAURITIUS</b>						
GRAND PORT One fixed light	20 24.3 57 47.1	White tower, 84 ft. high, on Ile aux Fouquets. Pilot station .....	1a	108	16	1864
Port Louis Lightvessel	20 8. 57 29.	In 15 fathoms, at the entrance. Flashes every 8 minute; near bell buoy anchorage .....	●	34	9	1867
Canonnier Point One fixed br. & red lt.	19 59.7 57 32.5	Br. lt., but appears red in-shore of S.W. & W. S., except where obscured by islands. Red light also shown over anchorage .....	..	38	10	1866
FLAT ISLAND One rev. br. lt., 1 m.	19 52.6 57 39.1	White tower, 53 ft. high, on S.W. angle of the island .....	●	365	25	1865
SEYCHELLES (Port Victoria)	4 36.7 55 31.	Lt.-ho. of coral, painted white, 42 ft. high, on N.W. point of Southern Reef, entr. to Port Victoria. Red lt. shown betw. N. and S.E. S., except where obscured by islands. Red light also shown over anchorage .....	●	37	9	1877
<b>COMORO ISLANDS</b>						
<b>MADAGASCAR</b>						
GULF OF ADEN Port Berberesh Lighthouse building	10 25. 44 59.5	On S. shore of p. rt, S. by W. & W. 1½ mile from Tamar Pt. To show hx. br. lt. Kept open eastward of S. clear Tamar Spit .....	4a	76	14	....
ADEN	12 45.4 45 4.	1. Dark stone tower, 69 ft. high, on the E. ex- treme of Ras Marshish .....	1a	244	20	1867
1. One bright fix. lt. 2. One fix. bright lt.		2. From light-ves., painted red, with red ball, in 24 ft., S. side of inner harbour; a gun and blue lts.; bad light .....	..	35	7	1850
<b>RED SEA.</b>						
PERIM ISLAND One rev. br. lt., 1 min.	12 40.3 43 25.	At 1,100 yds. S.W. of N.E. bluff. Shown all round horizon. Flashes every minute .....	2b	241	25	1861
1871						
DEDALUS SHOAL One fixed bright light	24 55.5 35 52.	An open iron-work structure, painted red, 70 ft. high, near S.E. extreme .....	2a	61	14	1862
El Weg (Sherm Wej'h) One fixed bright light	26 13. 36 27.	E. Coast, Red Sea. Lt. shown from lt.-ho. on E. side of entrance to harbour .....	..	106	14	1875
Brothers Islets Lighthouse building	26 22.5 34 49.	Lighthouse building .....	..	...	...	....
JUBAL STRAIT One revolving bright lt.	27 47.5 33 42.3	On Ushruffee, or Ashrafi Reef .....	1b	140	18	1862
ZAFARANA POINT One fixed bright light	29 6.3 32 44.	Stone tower, 82 ft. high, on the point .....	1a	83	14	1862
RAS GHARIB One bright fixed light	28 21. 33 7.	Red tower .....	..	165	20	1872
Suez Lightvessel One fixed bright light	29 53.5 32 32.9	West of Newport Rock, painted red. Vessels must pass to westward of her .....	..	52	12	1858
<b>SUEZ CANAL</b>						
Bitter Lake Two bright fixed lts.	.....	One bright fixed lt. at S. entrance .....	..	40	..	....
		One at N. entrance .....	..	40	..	....
Ismailia	.....	One red fixed lt. at Lake Timsh .....	..	..	..	....

Name and Character of Light.	Lat. N. Long. E. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>INDIA (West and Malabar Coasts).</b>						
<b>KURRACHEE</b>	24 47.3	1. To supersede fixed lt. on Manora Pt. New white round tower, 52 ft. high, adjoins S.W. bastion of Manora Fort.....	1b	150	20	1877
1. Rev. br. lt. ev. 2 m.	66 58.3	2. Shown on the extremity of Manora break-water in fine season only .....				1875
<b>Mandavee</b>	22 49.7	Entrance to Gulf of Kutch; on S.W. bastion of fort .....	4a	147	16	1853
One fixed bright light	69 20.4					
<b>Beyt (Bate) Harbour</b>	22 29.	Lt.-ho. of stone, 18 ft. high, on N.E. end of Sainia Island. Lt. vis. through arc of 180° .....	4a	35	11	1876
One fixed bright light	69 4.5					
<b>Dwarka Point</b>	22 14.	Kattywar Coast. Square stone tower, 40 ft. high, 117 yds. within high water line.....	..	70	10	1875
One fixed bright light	68 57.					
<b>Pur Bunder</b>	21 37.2	From tower on town wall .....	4a	85	15	1876
One fixed bright light	69 35.					
<b>Veraval</b>	20 53.5	Stone tower, 40 ft. high, on pier, N.W. side of harbour. Lt. vis. over arc of 180° .....	4a	56	13	1876
One fixed bright light	70 22.					
<b>CAMBAY GULF</b>						
<b>Perim</b>	21 35.9	White stone lighthouse, 78 feet high, on the island, W. side of the gulf .....	4a	128	17	1851
One bright fixed lt.	72 23.6					1867
<b>Gogah</b>	21 40.4	At N.E. angle of town. An indifferent lt. ....	..	..	10	1856
One fixed light	72 15.1					
<b>Koon Bunder</b>	22 17.	On a mast, on W. bank of Sabermutti River. Sept. 1 to June 15 .....	..	48	10	1856
One fixed bright lt.	72 18.3					
<b>Deojugan, or Tankaria</b>	21 55.	On a mast, on N. bank of Dhardur River. Sept. 1 to June 15 .....	..	50	10	1856
One fixed bright lt.	72 30.5					
<b>Bogwe, or Dandi</b>	21 19.7	On a low point, on E. side of gulf.....	..	..	10	1856
One fixed bright lt.	72 35.					
<b>TAPTI</b>	21 5.	Stone tower, 91 ft. high, red & white bands, on N. shore of Surat River, near Vaux's tomb .....	4a	100	15	1852
One bright fixed lt.	73 38.					1867
<b>Umarsari</b>	20 31.5	At the entrance to the Par River .....	..	..	..	....
Beacon light	72 53.					
<b>BOMBAY</b>						
<b>Kolaba Lightvessel</b>	18 50.	In 6 fathoms, 4½ miles S.S.W. from Kolaba Point. Painted red, with red ball. A blue light every hour, and torch lt. every ½ hour. Red flag when vessel is seen .....	•	36	9	1842
One rev. red lt., flash every 20 secs.	72 46.8					
<b>Shannon or Inner Lt.-V.</b>	18 53.5	½ mile S. of Shannon sunken rock. At 4½ miles N.E. & N. from outer lightvessel. Red flag when a vessel is seen .....	•	..	10	....
One fixed bright lt.	72 50.					
<b>S.W. PRONG</b>	18 52.7	Lighthouse on S.W. Prong, 1½ mile from Kolaba Point; is painted with white, red, white and black horizontal bands.....	1b	140	18	1874
One br. rev. lt., 10 s.	72 47.5					
<b>Dolphin Rock</b>	.....	Stone tower on the rock. Lt. is green betw. S. & E., br. betw. E. and N.E. by E. & E. (over British Mail S.S. anchorage), & green betw. N.E. by E. & E. and N.W. & W. ....	5a	20	2	1857
One fix. br. & green lt.		Fixed light on Custom-house pier .....	..	..	..	1878
<b>Tourbah</b>	.....					
<b>KHUNDARI ISLAND</b>	18 42.3	Octagonal tower, 75 ft. high, on Khundari or Kennery Island, S. of Bombay Harbour. A flagstaff to N.E. & N. from the tower .....	1a	161	20	1867
One bright fixed lt.	72 48.8					
<b>BUTNAGHERRY</b>	16 59.5	White column, 37 ft. high, on an old fort on the bluff headland. Anchorage in 7 or 8 fms., at 1 mile to S.W. ....	3a	300	18	1867
One fixed red light	73 15.8					
<b>Rajapur River</b>	16 36.1	Lt.-ho., 21 ft. high, on Keeva Hill, near S. pt. of Rajapur River. Not exhibited betw. June 11 and Sept. 9 .....	6a	75	9	1873
One fixed bright light	73 18.5					
<b>Malwan</b>	.....	1. Shown on the beach..... 2. Shown from boat, S.E. of rock, at entr. of port. Entering, keep green light just open southward of red lt., and anchor with Vingorla Rock light bearing S. & W. .....	..	20	..	1878
1. One fixed green light						
2. One fixed red light						
<b>Vingorla</b>	15 51.3	21 feet apart. Not shown in S.W. monsoon, between June 15 and Aug. 31.....	6a	250	10	1869
Two bright fixed lights	73 36.2					
<b>VINGORLA ROCKS</b>	15 53.3	On outer Burnt Island, 9½ miles W. by N. from Vingorla Point .....	4a	110	12	1870
One bright fixed light	73 26.7					

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>GOA</b> One revolving bright lt.	15 29.4 73 45.7	Tower, 40 ft. high, on Aguada Fort, on a hill above the landing-place, about a mile from the outer port.	..	280	12	....
<b>SEDASHIGUR BAY</b> 1. One fixed bright lt. 2. One red fixed light	14 49.2 74 2.7	1. Granite tower, 45 ft. high, on outer Oyster Rock ..... 2. Red lt. from window of the Post-office, near Koney Hill, at Port Karwar.....	1a	205	25	1865
<b>Cumta</b> One fixed light	14 25. 74 22.5	A lantern on a column, 65 ft. high, on the hill at the mouth of the creek .....	..	180	10	1855
<b>MANGALORE</b> One fixed bright light	12 52.2 74 49.5	White tower, 50 ft. high, on a hill above the town, at $\frac{1}{4}$ mile E.N.E. from the entrance to the river .....	4a	240	11	1870
<b>Cannanore</b> One fixed red light	11 51.3 75 21.7	On a flagstaff in the fort. Not shown during S.W. monsoon.....	6a	110	12	1843 1871
<b>Tellicherry</b> One fixed bright light	11 44.8 75 28.5	On a flagstaff in the fort. Shown from N.W. by W. to S.E. by S. Not shown during S.W. monsoon.....	..	112	8	1835 1846
<b>Calicut</b> One fixed bright light	11 15.2 75 45.6	On a white column, 110 ft. high, near the beach. Shown westward, from N.W. to S.S.E. Buoy marks 8-feet rock, 1 mile off shore, S. by E. $\frac{1}{2}$ E. from lighthouse. Not shown during S.W. monsoon, May 16 to Aug. 10 .....	4a	105	12	1847
<b>Narrakel</b> One fixed bright light	10 2. 76 13.5	From flagstaff; shown only during S.W. monsoon, from May 15 to Sept. 30 .....	..	..	..	....
<b>COCHIN</b> One bright fixed light	9 57.8 76 14.7	Stone tower, 89 ft. high, near the beach, S. side of the entrance. Best anchorage in $\frac{5}{2}$ to $\frac{6}{2}$ fathoms, at from 2 to $2\frac{1}{4}$ miles W. of the light .....	4a	95	14	1868
<b>ALIPEY</b> One rev. br. lt., 1 min.	9 30. 76 19.	White brick tower, 90 ft. high, on the sandy beach .....	2b	100	15	1862
<b>Kadiapatam Point</b> One fixed bright light	8 7.5 77 18.	Tower, 16 ft. high, on Kadiapatam, or Mutum Point. Crocodile Rock S.W. $\frac{1}{2}$ S. 2 $\frac{1}{2}$ miles...	..	85	12	1875
<b>Comorin Cape Building</b>	8 5.2 77 32.5	Lighthouse building for revolving light .....	4b	..	..	....
<b>Minicoy Island Proposed</b>	8 17. 73 3.	Proposed lighthouse .....	..	..	..	....

## CEYLON.

<b>COLOMBO</b> One fixed bright light	6 55.9 79 50.9	In clock tower, in the centre of the fort.....	2a	134	20	1860 1867
<b>POINT DE GALLE</b> One fixed bright light	6 1.4 80 12.5	White tower, 80 ft. high, on S. bastion. Lifeboat ..	..	100	12	1848
<b>GREAT BASSAS ROCK</b> One rev. red lt., $\frac{1}{2}$ min.	6 10. 81 28.4	Lt.-ho. has conical roof and one gallery at top of tower. Fog-bell sounded once ev. 15 secs.	1b	110	16	1873
<b>LITTLE BASSAS ROCK</b> One flashing bright lt.	6 23. 81 43.	Lt.-ho. has dome roof and two galleries at top of tower. Lt. shows two flashes once ev. min. Fog-bell sounded, 2 strokes once ev. $\frac{1}{2}$ min.	..	110	16	1878
<b>Little Bassas Lt.-Ves.</b> One br. rev. lt., $1\frac{1}{2}$ min.	6 23.3 81 43.3	Inside the reef, N. by E. $\frac{1}{2}$ E., $1\frac{1}{2}$ mile from centre rock .....	●	33	10	1868
<b>Batticaloa River</b> One fixed bright light	7 43.8 81 41.3	Exhibited at river entrance while it is open, betw. Feb. 15th and Oct. 31st.....	..	50	..	1878
<b>TRINCOMALIE</b>						
<b>Foul Point</b> One br. rev. lt., $\frac{1}{2}$ m.	8 32.2 81 18.8	On the S. side of the bay. Eclipses not total within 7 miles .....	2b	104	17	1864
<b>Round Island</b> One bright fixed lt.	8 31.5 81 12.8	On the West side of the bay .....	4a	..	10	1868

Name and Character of Light.	Lat. N. Long. E. °      °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Your established.
<b>COROMANDEL COAST.</b>						
Tuticorin One fixed bright light	8 47.3 78 11.3	Obelisk, 37 ft. high, on Hare Island, $\frac{1}{2}$ miles East of Tuticorin. Shown eastward, from S. by W. to N. by W. ....	4a	68   12   1845		
PALK BAY One fixed bright light	9 17.5 79 12.6	Round tower, 56 ft. high, 1 mile E. of Paumben Pass ....	a	97   12   1845		
Negapatam One fixed bright light	10 45.7 79 50.2	White tower, 75 ft. high, on bastion ....	4a	82   12   1846		1870
Karikal One fixed bright light	10 55. 79 50.8	On a flagstaff ....	..	65   8   1853		
PONDICHERY One fixed bright light	11 55.7 79 49.9	In the square. Two lts., vertically, are shown from a flagstaff during rebuilding of lt.-ho. ....	..	131   10   1836		
MADRAS 1. One fix. & flash. lt. 2. Two fixed red lts.	13 5.2 80 16.5	1. Column, 125 ft. high, on esplanade, N. of fort. Flash ev. 2 min. Kept outside a bearing of S.S.W. & W., to avoid Pulicat S. out. .... 2. At 6 ft. apart, vertically, & vis. within limits of port. Shown on outer end of N. groin of new harbour works. Vessels should not approach into a less depth than $6\frac{1}{2}$ fathoms ....	..	132   24   1814		1878
Pulicat One fixed red light	13 25.3 80 19.5	A white column, 61 ft. high. When bearing W. & N., clears all shoals to northward ....	4a	73   7   1862		
ARMEGON SHOAL One fixed bright light	13 52.8 80 12.	White tower, 107 ft. high, at the village of Moona, or Moonapolum, 1 mile in-shore, and 5 miles W. & S. from the shoal ....	4a	105   16   1853		
POINT DIVY One fixed bright light	15 58.9 81 9.5	White column, 43 ft. high, at 2 miles N.W. of Point Divy. Shown eastward, from S. to N.E. ....	4a	90   12   1851		
Masulipatam	16 9.2	One fixed light on the flagstaff, in fort ....	6a	69   6   1870		
GODAVERY One fix. br. lt.,	16 49.1 82 18.4	Tower, 100 ft. high, black and white bands, $1\frac{1}{2}$ mile W. by N. of Godavery Point. ....	4b	95   15   1817		1868
Cocanada One bright fixed light	16 56.2 82 14.8	At Conara, on N. side of entrance to Coconada, or Jaggernickporam. New lt.-ho. building N. by E. $\frac{1}{2}$ m. from present tower (1876) ....	●	112   10   1868		
Vizagapatam Temporary fixed red lt.	17 41.8 83 17.3	Shown from Dolphin's Nose Hill ....	4a	640   6   1874		
SANTIPILLY One fixed bright light	18 3.5 83 36.6	On roof of a house, on Conada Hill, $\frac{1}{2}$ mile in-shore. The rocks lie $6\frac{1}{2}$ miles to S.E. by E. & E. ....	4a	150   14   1849		
Calingapatam Point One fixed bright light	18 19. 84 7.5	To clear reef extending off pt., which should not be approached to a less depth than 8 fms. ....	●	64   8   1877		
Gopalpore One bright fixed light	19 13. 84 52.	On a flagstaff; anchor with light bearing N.W. & W. in 8 or 9 fathoms ....	3a	89   8   1872		
Pooree Light proposed	19 47.9 85 49.1	Small lantern-light proposed, from flagstaff, 110 ft. above the sea ....	..	..   ..   ..   ....		
FALSE POINT One fixed bright light	20 20.5 86 47.5	Granite tower, with white star, 2 miles S.W. of point ....	..	120   18   1838		
Pilot Ridge Lightvessel One fixed bright light	20 50. 87 41.	Moored in 214 fms. during S.W. monsoon only. Globe at mast-head, painted in wh. & black horizontal band. Blue lt. and a maroon alternately every half hour. ....	●	28   12   1851		
HOOGLY RIVER East Channel Lt.-Ves. One fixed bright lt.	21 3. 88 15.5	From Oct. to March, in 84 fms. at entr. to E. chan., with maroon or torch ev. $\frac{1}{2}$ hour, and blue lt. ev. hour. From March 15 to Sept. 15 (in S.W. monsoon) is removed to lat. 21° N., with blue lt. ev. $\frac{1}{2}$ hour, and maroon ev. $\frac{1}{2}$ hour with Gaspar lower lt.-ves. ....	●	28   12   1843		
Intermediate Lt.-Ves. One fixed bright lt.	.....	Moored midway betw. lower E. chan. lt.-ves. & Gaspar lower lt.-ves. Exact position uncertain. Moored temporary, S. by E. & E. 12 miles from Lower Gaspar lt.-ves. By day she shows a double triangle from mast-head	..	28   10   1877		
Gaspar Lower Lt.-Ves. One fixed bright lt.	21 26. 88 7.	In Gaspar Chan., in 84 fms., 8 leagues N. by W. from intermediate lt.-ves. Blue lts. and maroons alternately. Fog-gun at the hour and half hours ....	..	28   10   ....		
Gaspar Upper Lt.-Ves. One fixed bright lt.	21 31. 88 3.	In 83 fms. S. by E. & E. from Saugor lt.-ho., & N.W. by N. from Lower Gaspar lt.-ves. Fog-gun at the first and third quarters of the hour	●	26   8   ....		

The Hoogly lightvessels all show riding lights on fore-stay; and when out of position the usual lights are not shown, but only a red light at stem and stern. By day, when out of position, mast-head marks are struck. Rockets are fired when assistance is needed from shore.

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SAUGOR ISLAND</b> One br. rev. lt., 20 s.	21 38.5 88 3.8	Iron tower, 82 ft. high, on Middleton Point. Electric telegraph to Calcutta .....	..	88	15	1848 1852
<b>COWCOLLY</b> One fixed bright light	21 50.2 87 57.8	Two miles S.W. of Kedgerree Point; used as a guide for anchoring .....	..	52	12	1810
<b>Mutlah River Light-yes.</b> One fixed bright light	21 4 88 48.	In 11 fms. Globe, painted red and white hori- zontally, at mast-head. From Mar. 16 to Oct. 16, a rocket at 8 p.m., midnight, and 4 a.m.	..	30	7	1857 1875
<b>BAY OF BENGAL.</b>						
<b>Chittagong River</b> Two bright fixed lts.	22 10.8 91 48.5	Shown from wh. beacons, $1\frac{1}{4}$ mile S. of river entr., 40 yds. apart N.W. by W. $\frac{1}{2}$ W. and S.E. by E. $\frac{1}{2}$ E., eastern light higher than western. Approach with its. E. $\frac{1}{2}$ N., and anchor in 5 fms. $2\frac{1}{2}$ miles distant from them	..	..	..	1866 1878
<b>KOOTURDEAH ISLAND</b> One fixed bright light	21 53.5 91 52.8	Tower, 106 ft. high, on W. part of the island	..	120	7	1846
<b>OYSTER REEF</b> One fixed bright light	20 5. 92 39.	Pile lighthouse, in 4 fathoms.....	2a	77	15	1876
<b>ARRACAN, or AKYAB RIVER</b> One fix. & flashing lt.	20 5.3 92 55.6	Tower, 50 ft. high, on Great Savage Island, S. entrance of Akyab Harbour. Flash every minute .....	3c	99	13	1844
<b>Terribles Rocks</b> <i>Proposed</i>	19 22.5 93 17.	Proposed on S. rock, off Kyauk Phyau .....	..	..	..	....
<b>ALGUADA REEF</b> One br. revol. lt., 1 m.	15 42.5 94 14.	A noble granite tower, 100 ft. high, on reef, off Cape Negrais, S.W. of entrance to Bassin River .....	1b	144	20	1865
<b>Krishna Shoal Lt.-Ves.</b>	15 36.3 95 34.5	Moored in 9 fms. water, 8 miles E.N.E. of late position of lt.-ho. Blue lt. shown ev. $\frac{1}{2}$ hour, and m. roon at intermediate quarters .....	..	..	..	1878
<b>ANDAMAN ISLANDS</b> One bright fixed light	14 12.5 93 17.8	Iron tower, 91 ft. high, red and white bands, on Table Island, the northernmost of the Coco Islands. Shown from S. by W. to S.S.E. $\frac{1}{2}$ E., the rest hidden by Great Coco Island.....	1a	195	22	1867
<b>RANGOON RIVER</b>						
<b>CHINA BUCKEER</b> One fix. & fl. lt. 1 m.	16 15.5 96 6.3	Pile lt.-ho., in 12 ft. Lt. vis. seaward betw. S.W. by W. $\frac{1}{2}$ W. to N.E. by E. $\frac{1}{2}$ E. .....	1c	78	15	1870 1876
<b>EASTERN GROVE</b> One fixed bright lt.	16 29. 96 26.5	Screw pile lighthouse, E. side of entrance to Rangoon River. Lt. visible between N. and N.E. by E. $\frac{1}{2}$ E. .....	3a	93	15	1870
<b>DOUBLE ISLAND</b> One fixed bright light	15 52.5 97 36.2	Shown westward, from N.N.W. to S. $\frac{1}{2}$ E. Kept in sight avoids danger. A strip of light shown from Patch buoy to Amherst Point .....	1a	134	19	1866
<b>PULO BRASSE</b> 1. Revol. lt. ev. min. 2. Auxiliary red fix. lt.	5 45.3 95 4.2	1. White tower, 120 feet high, upper part red, on N. pt. of Pulo Brasse, near Achene Head. Lt. vis. betw. W. $\frac{1}{2}$ S. by N. & E. to S.E. $\frac{1}{2}$ E. 2. Shown below principal lt. Vis. N.W.-ward betw. N. by W. $\frac{1}{2}$ W. and W. by S. $\frac{1}{2}$ S. ....	1b	525	30	1875 1876
<b>MALACCA STR. Lt.-ho.</b> One br. rev. lt., 1 min.	2 52.1 100 59.	A screw pile tower, standing in 15 ft. water, on W. part of the 1-athom bank, painted in belts of red and slate colour .....	..	61	13	1874
<b>PULO LUMAUT</b> One fixed bright light	2 52.8 101 14.3	From wooden framework, on S.W. extr. of id., at entr. of Lumaut Strait. Shown betw. S. by E. and S. W. by W. $\frac{1}{2}$ W. ....	..	30	10	1878
<b>RACHADA CAPE</b> One fixed bright light	2 24.8 101 51.2	Round wh. tower, 78 ft. high, on cape. Shown westward, from N.W. by W. to S.E. by E.	2a	466	25	1863

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. in Miles.	Visible in Miles.	Year established
<b>MALACCA</b> One fixed bright light	2 12.2 102 15.5	On St. Paul Hill, N.E. side of the Strait of Malacca. A red lt. is shown on the pier-head	...	180	16	1849
Pulo Pisang	.....	Lt.-ho. constructing, to show lt. betw. S.E. by E. & E. & N.W. & N. through S. and W. ....	...	...	...	....
<b>RAFFLES</b> One fixed bright light	1 9.9 103 44.8	White tower, 91 ft. high, on Coney Islet, Strait of Singapore. Shown southward, from N.W. by W. to E.N.E. ....	...	105	12	1855
<b>Singapore</b> One fixed bright light	1 17.7 103 50.9	On flagstaff in Fort Canning, on Government Hill. Seen between St. John's Island and Johore shoal .....	...	226	15	1855
<b>HORSBURGH, or Pedra Branca</b> One rev. br. lt., 1 min.	1 20. 104 24.5	White tower, 93 ft. high, on summit of rock...	...	95	15	1851

**RHIO STRAIT**

<b>Little Garra Island</b> One bright fixed lt.	0 46.1 104 21.4	On the eastern hill in the centre of the island, on W. coast of the strait .....	...	118	8	1867
<b>Terkolei</b> One bright fixed lt.	0 58.7 104 19.6	On the W. end of the island, on E. coast of the strait .....	...	31	6	1867
<b>Sauw Island</b> One bright fixed lt.	1 4.6 104 10.2	On E. extreme of the island .....	...	118	8	1867

**SUMATRA and JAVA.**

	Lat. S.					
<b>Benkoelen</b> 1. One fixed light 2. One red fixed light	3 47. 102 19.	1. At Pulo Tikoes .....	...	39	8	....
<b>Padang Roadstead</b> <i>Proposed Lights</i>	1 50. 100 35.	2. At Tapu Padrie. Shown seaward, from N. to W. by S. .... Sumatra (W. Coast). 1. On Pulo Padang, to show white seaward, & a narrow red sector towards land, betw. E. & S. & E. by S. & S. 2. On S. W. pt. of Pulo Pisang Besar. Br. lt. visible seaward .....	.. 2a 3. A br. lt. on N. W. side of Apenberg, entr. of Padang River. Shown from W. through N. to shore of Padang River.....	59 20 6a 4	3 20 10 ....	1867 .... .... ....
<b>TJILATJAP</b> One bright revol. lt.	7 44.7 109 1.6	On Tjimiring Hill, on Kounbangan Island, S. Coast of Java. Flash every minute.....	3b	655	20	1870
<b>SUNDA STRAIT</b>						
<b>Flat Point</b>	6 2. 104 26.	N.W. entrance point of Sunda Strait. Flashing lt. to be shown, giving 3 flashes in quick succession ev. 1 min., followed by short eclipse	...	...	...	....
<b>Telok Betong</b> One fixed red light	5 28.3 105 16.	Head of Lampong Bay, S. Coast of Sumatra. From standard on white stone pedestal at extreme of landing-stage.....	6a	56	9	1876
<b>FIRST PT. (Java Hd.)</b> One rev. bright lt.	6 44. 105 11.5	Stone lt.-ho., painted white. Cataadioptric lt. by lenses and reflectors. Shows a flash of 6 secs., and is obscured for 24 secs. in ev. 4 m.	●	315	25	1877
<b>Fourth Point</b> Two fix. bright lts.	6 4.5 105 53.	Red tower, 35 ft. high, 2½ miles to S.W. by W. of the port. A second lt. shown in the direction of the telegraph cable from the point to Hog Point, Sumatra.....	2a ..	151 8	20	1855 1872
<b>Anjer</b> One fixed red light	6 3.2 105 55.	On the western pier .....	..	23	4	....
<b>Menscheneter Island</b>	106 30.8	Building for flashing light .....	3c	...	...	....
<b>Great Kombuys Island</b> One fixed bright light	5 55.5 106 34.5	On N.W. point of island .....	6a	...	9	1878
<b>Middleberg Island</b>	106 41.2	Proposed red lt. on S. point .....	4a	...	...	....
<b>Rotten Island</b>	.....	Proposed on the jetty .....	6a	...	...	....
<b>Edam Island</b>	106 50.2	Proposed light .....	2a	...	...	....
<b>BATAVIA</b> One fixed bright lt.	6 5.1 106 47.7	On the West pier. When bearing between S. & W., and S. & E., leads to the anchorage	4a	6½	13	1862
<b>RACKIT, or BOOMPJES ISLAND</b> One bright rev. light	5 54. 108 20.	An open iron-work tower, 164 ft. high, on the southernmost island .....	1b	175	23	1872

Name and Character of Light.	Lat. S. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above W. in Miles.	Visible in Miles.	Year established
Cheribon	6 45.	On the outer end of the N. mole, to show the roadstead .....	a	28	8	1867
One .... light	108 34.					
Tegal	.....	Red light proposed .....	6a	...	...	....
Carimon-Java Islands <i>Proposed</i>	5 47. 110 6.7	Proposed revolving lt. on Katang, or Western Island .....	...	...	...	....
NORTH WATCHER	5 13.5	Iron tower, white, on the island. Flash every minute .....	2b	159	20	1869
One bright fixed light	106 26.5					
Pekalongan	6 54.5	On the W. side of the river, to mark the road off it .....	a	26	8	1866
One fixed bright lt.	109 43.					
Samarang	6 57.8	Harbour lt., when works are completed.....	6a	...	8	1872
One bright fixed lt.	110 24.2					
Japara	110 42.4	Red light proposed on Jalis Point .....	6a	39	...	....
SQURABAYA STR. Lt.-v.	6 57.5	Painted yellow; in 5 fathoms, at N. entrance	6a	21	8	1872
One fixed bright light	112 38.2					
Kresik or Grissec	7 9.	At the harbour in Sourabaya Strait .....	6a	42	10	1872
One bright fixed lt.	112 40.					
MADURA STRAIT	7 28.	On the Zwantjes or Koko Reef. Fixed light, with flash every 2 minutes. Fog-bell.....	..	54	14	1871
One fixed and flash lt.	113 7.					
Meinders Reef	114 22.5	Pile lighthouse building, to show fix. bright lt.	..	56	12	....
Joana	.....	Bright light proposed on iron post .....	..	...	..	....
Passaroean	112 55.	Fixed red lt. reported shown on iron post .....	6a	39	..	....
Probolingo	113 10.5	Fixed red light proposed on iron post .....	6a	39	..	....
Bezoeki	113 40.	Fixed bright lt. reported shown on iron post .....	6a	39	..	....
Panaruekan	113 56.	Fixed red light reported shown on iron post .....	6a	39	..	....
BALY ISLAND	8 2.5	1. Open iron-work tower, 30 ft. high, on Tabuan Duiven, or Gilboe Island, N. entr. to strait	4a	55	15	1872
1. One bright fixed lt.	114 27.	2. At Sangnit (Pabejan), N. coast of Baly Id. ....	..	...	..	....
One fixed red light						
Banjoewangie	8 12.3	On Utrecht Fort, in Baly Strait. Bearing W. cleare all dangers .....	6a	41	8	1865
One bright fixed lt.	114 20.2					
Timor Island	8 33.	At Delli, N. coast of Timor .....	..	...	..	1867
One bright fixed light	125 37.					
Koepang	.....	S.W. coast of Timor Island. Fixed red light proposed from iron post .....	6a	39	..	....
BANKA STRAIT						
Lucipara Chan. Lt.-V.	3 6.	In narrowest part of S. entrance of channel is painted yellow. One mast, with black ball	6a	28	9	1870
One bright fixed lt.	106 6.2					
Tobu Ali	3 1.	Proposed in the fort .....	..	..	..	....
Frederic Hendrik	1 58.2	Lightvessel said to be preparing .....	..	..	..	....
Mintok	2 5.5	One fixed bright light on end of pier .....	6a	29	8	1865
Pulo Dahan Lt.-Ves.	2 55.	Proposed, $\frac{4}{5}$ miles S. of islet, in Stanton Chan.	..	..	..	....
TANJONG-KALIAN	2 4.6	Fix. lt. from white tower, W. end of Banks Id.	2a	170	20	1862

Name and Character of Light.	Lat. S. Long. E. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>MACCLESFIELD CHANNEL</b>						
Pulo Lepar One bright fixed lt.	2 56.5 106 55.	On Tanjong Laboc, E. point of island, in Mac- clesfield Channel.....	6a	39	8	1870
Jelaka Island One bright fixed lt.	2 50.5 107 1.5	On W. side of Pulo Leat, in Macclesfield Chan- nel. Shown seaward, from N.E. by N. to S.S.E. ....	..	39	8	1870
SARAWAK RIVER One bright fixed light	1 43.8 110 30.5	Light-yellow tower on Po Point, Maratabas entrance of Sarawak River.....	..	490	14	1873
Mukah One fixed bright light	.....	N.W. Coast of Borneo .....	3	...	7	1878
Kidurong Point One fixed bright light	.....	N.W. Coast of Borneo .....	3	...	7	1878
MAKASSER 1. One fixed bright lt. 2. One fixed bright or red light	5 8.2 119 23.5	1. A white tower on Fort Rotterdam, on Oed- jong Pandang .....	..	47	10	1861
		2. Half a mile S. of Losari Monument. Lt. is bright, but is red in fairway coming from S. and W. Approach it on a N.E. by N. bearing .....	..	89	8	1870
Gorontalo	Lat. N. 123 12.	East coast of Celebes. Red light proposed ...	6a	26	..	....
Balabac Island One bright fixed light	8 1. 117 1.2	Square white tower, on S. part of Pto. Prin- cipe Alfonso, or Colandorang Bay, E. coast of Balabac.....	5a	268	12	1865

### PHILIPPINE ISLANDS.

Samboanga One fixed red light	6 54. 122 4.2	At the extremity of the mole, Island of Min- danao.....	..	35	5	1866
Zebu Port One fixed bright light	10 24. 123 59.4	On Bagacay Point, N.E. entrance .....	..	46	4	1857

### BOMBLON ISLAND

Sabang Point One fixed bright lt.	12 36. 122 17.1	Stone tower.....	..	..	..	1857
Off Sabang beacon	.....	One bright fixed light .....	..	..	..	1866
Off Agbatan beacon	.....	One bright fixed light .....	..	..	..	1866
Off Binagon Pt. beacon	.....	One bright fixed light .....	..	..	..	1866
Off Rosas Pt. beacon	.....	One bright fixed light .....	..	..	..	1866

### MANILA BAY

CORREGIDOR ID. One rev. br. lt., 1 m.	14 23.1 120 33.5	Tower, 60 ft. high, on summit of the island in the entrance to Manila Bay. ....	2b	639	20	1853
West Mole Head	.....	A white tower, with bright fixed light .....	..	..	..	1866
Caballo Island One fixed bright lt.	14 22.5 120 36.	On N.E. part of islet, which hides it seaward. Also masked northward from N. $\frac{1}{2}$ E. to N.W. by W. $\frac{1}{2}$ W. ....	4a	27	6	1853
Manila 1. One fixed red lt. 2. One fix. green lt.	14 36.1 120 57.3	1. N. side of entrance, River Pasig..... 2. Red iron tower on battery of S. mole, en- trance of Pasig River .....	6a	51	8	1846
Cavite One fixed bright lt.	14 30. 120 54.	On Sangley Point .....	..	29	7	1864

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BURIAS ISLAND</b>						
Busin Harbour Three br. fixed lts.	13 8. 122 55.	One at N. entrance, one at W. entrance, one at the end of the bank. Brought in one, they lead through the channels.....	..	28	8	1864
Busainga Harbour One fixed blue light	13 7.5 123 15.	On Pedras Point, on N.W. coast, 8 miles S. of Anima Sola Rock .....	..	28	8	1864
Malaguing-Gilog Harbour One fixed blue light	12 55. 123 0.	On S.W. coast. A square tower N.W. of Sibugan Island .....	..	28	8	1864
Boca-Engano Harbour One fixed bright lt.	12 49. 123 10.	A square tower on the outer point .....	..	28	8	1864
<b>CHINA, &amp;c.</b>						
BANGKOK RIV., Siam One bright fixed light	13 29.4 100 35.3	Screw pile lt.-house on the edge of the bank, inside the bar, at the entrance of the river...	3a	44	11	1874
CAPE ST. JAMES One fixed bright light	10 19.2 107 5.4	On S. height of the cape, $\frac{1}{2}$ of a mile within S. ridge, E. side of Saigon River, S.E. coast of Cochinchina. Electric telegraph to Saigon	1a	482	28	1862
Cangiou Lightvessel One fixed light	10 36.8 106 51.2	In 5 fms., at elbow of Phuocinhgiang River, $\frac{1}{2}$ miles from Cangiou Point .....	..	33	10	1864
Hondau (Dat Shon) Id. One fixed bright light	20 40. 106 47.	S. side of entr. of Cua Cam River. Vis. betw. N. by W. & W. and S.W. Uncertain light...	..	164	8	1876
MACAO One bright revol. lt.	22 11. 113 33.5	White tower, 45 ft. high, on Fort Nossa Senhora da Guia, on the Macao Peninsula .....	..	338	20	1865
AI-chau Island	113 56.	Proposed light .....	..	..	..	....
Canton River Two red fixed lights	.....	One under Dutch Folly Fort; the other on opposite barrier. Guide for steamers .....	..	..	..	1859
<b>HONG KONG ISLAND</b>						
Green Island One fixed light	.....	N.W. end of Hong Kong Id. Shows red from N. by W. & W. through W. to S. by W. & W.; green from S. by W. & W. to S.E., and from N. by W. & W. to N.N.E. & E. ....	4a	95	14	1875
Cape D'Aguilar One fixed bright lt.	22 12.3 114 15.8	S.E. extr. of Hong Kong Id. Stone tower, 57 ft. high. Visible betw. N.E. and S.E. & E. S.E. & S. and S.S.E.; S.W. by W. and W. by S. & S.; and over Tathong Channel. In other directions obscured by islands .....	1a	198	23	1875
Cape Collinson One fix. red & br. lt.	.....	White to eastward from N.N.W. to S.S.E., & red to westward. Approaching Victoria Harbour keep in white light .....	6a	200	8	1876
Pratas Shoal	116 43.4	Proposed light on western part .....	..	..	..	....
Breaker Point	116 28	Proposed light .....	..	..	..	....
HIGH LAMOCK ID. One bright fixed light	23 14.8 117 17.5	Black cast-iron tower, 54 ft. high. The lower red fixed light on the slope of the island is shown to between S.W. by S. and S.W. & W., covering the White and Boat Rocks .....	1a	241	22	1874
PESCADORES ID8. One fixed bright light	23 32.8 119 28.2	Iron tower, black, 33 ft. high, on Litsitah Pt., S.W. point of Fisher Island .....	4a	55	7	1874
CHAPEL ISLAND One bright revol. lt.	24 10.3 118 13.5	Brick tower, painted black, 63 feet high. Flashes every half minute .....	4a	205	15	1876
AMOY HARBOUR 1. One fixed light 2. One fix. red & br. lt.	24 24. 118 9.	1. Shows from octagonal white tower, 16 feet high, on Taiton Id., near entr. to harbour. Visible from West round by N. to S.E. .... 2. Red and white striped tower, 33 ft high, on Tsing-seu Id. Red lt. betw. S. & S.E. by E.; white over entr. & up harb. from S.E. by E. to N.W. & W.; & red from N.W. & W. to W. ....	1a	227	22	1871
OCKSEU ISLAND One br. rev. lt. 1 min.	24 59. 119 28.	Round stone tower, painted black, 64 ft. high, on the West or High Ockseu Island .....	1b	286	24	....
TURNABOUT ISLAND One bright fixed light	25 26. 119 58.7	Black round tower, 54 ft. high, on Id. off Haitan Id., N. pt. of Formosa Strait. Sunda Rr. lies $\frac{3}{4}$ cables N. of Id., and a rock awash 1 $\frac{1}{2}$ cable S. of it .....	1a	235	22	1873

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>MIDDLE DOG ISLAND</b> One br. fix. & flash. lt.	25 58.3 120 2.3	White stone tower, 64 ft. high, on White Dog Islands, Min River entrance. Lt. flashes every $\frac{1}{2}$ min. Shown seaward from W. by N. $\frac{3}{4}$ N. by N. and E. to S.W. & W. Obscured by islands to the S.W. ....	1c	257	22	1873
<b>Pagoda Anchorage</b> One fixed red light	.....	Shown from iron pile lighthouse, with cage ..	..	14	..	1871
<b>YUNG RIVER</b> 1. One fixed bright lt. 2. One fixed red light	29 59.4 121 45.	1. On Tse-le, or Square Id. summit, $3\frac{1}{2}$ miles N. E. of entrance. Fog-bell every 15 secs.... 2. Octagonal tower, red and white bands, on Pas Yew Island, western of islets in entrance. Gong sounded in foggy weather .....	5a	123	v	1865
<b>Video Island</b>	30 8. 122 45.	Light proposed .....	..	..	..	....
<b>WEST VOLCANO ID.</b> One fixed bright light	30 18. 121 55.5	Black stone tower, 33 feet high, on Island, in Chusan Archipelago .....	4a	93	15	1872
<b>NORTH SADDLE ID.</b> One br. rev. lt., 1 min.	30 50.3 122 40.	Brick tower, 25 ft. high, upper part black, lower white, on N.E. extreme. Lt. obscured southward, from S.E. $\frac{3}{4}$ E. to W. by S. & S.	1b	273	24	1870
<b>GUTZLAFF ISLAND</b> One bright fixed light	30 47.6 122 10.	At entrance of Yang-Tse Kiang. Signal gun and flag-signals .....	3a	270	20	1869
<b>YANG-TSE KIANG</b>						
<b>Tung-Sha Lightvessel</b> One br. rev. lt., $\frac{1}{2}$ m.	31 7.7 122 1.	Red, one mast and black ball; Tung-sha on her sides. In $3\frac{1}{2}$ fms. on S.W. part of bank, N. by W. & W. from Gutzlaff Id. Lt.-house. Warning gun and Commer. Code. Steam fog-horn every 10 secs. ....	●	40	11	1855
<b>Kiu Toan Lightvessel</b> One fixed bright lt.	31 14.8 121 43.8	Moored in mid-channel N.E. of Kiu Toan beacon. Painted red, with 8 ft. black ball at mast-head while in position. Fog-bell struck three times (5 secs. apart) in every minute...	●	35	11	1878
<b>Kiu Toan Small Beacon</b> One red fixed light	31 18.1 121 39.3	Five miles N.W. from Kiu Toan beacon, from which a light was formerly exhibited .....	..	..	5	1869 1878
<b>WUSUNG RIVER</b> 1. One bright, green, or red fixed light 2. Red and bright lts.	31 23.4 121 29.6	1. Square brick tower, 58 ft. high, on W. side of Wusung entrance. Shows br. from the river bank, N.W. of lt.-ho., to N. $29^{\circ}$ E., green betw. N. $27^{\circ}$ E. and N. $59^{\circ}$ E., br. over navigable channel betw. N. $59^{\circ}$ E. & N. $72^{\circ}$ E., and red betw. N. $72\frac{1}{2}$ E. and the opposite bank of river .....	4a	50	10	....
<b>Sha-wei-shan Island</b> One fixed bright light	31 24.5 122 14.	2. Vertically, upper red, lower br. lt., from lt.-vessel moored on E. side of Outer Bar.....	..	..	..	1878
<b>Chifu Harbour</b> One fixed bright light	37 34.2 121 31.5	Tower black, 55 ft. high, dwelling white on summit of island .....	1a	229	22	1871
<b>SHANTUNG PROM.</b> One fixed light	37 24. 122 42.	On summit of largest of the Kung Kung Islands, at the entrance, in the Yellow Sea	●	242	22	1867
<b>MAITAU ISLAND</b> Proposed	37 54. 120 56.	White stone tower, 64 ft. high. Lt. is bright from N.W. by W. & W. to N.N.W. & W.; thence red to N. by W. & W.; white thence to S.S.W. by E. and S.; and thence red to S.W. & W. Obscured by hills from N.W. by W. & W. to N. by W. & W.; and by island to N.N.W.	1a	200	20	1875
<b>SHA-LIEU-TIAN ISLAND</b> Proposed	38 53. 121 33.	Light proposed .....	..	..	..	....
<b>Peiho River Lt.-ves.</b> One fixed bright lt.	38 53. 117 50.5	Moored in 8 fms. $5\frac{1}{2}$ mile S.E. of Taku Bar. Bar entrance buoy (red) lies N. $35^{\circ}$ W. $3\frac{1}{2}$ miles from lightvessel .....	a	36	10	1878
<b>Lian River Lightvessel</b> One bright fixed light	40 35. 122 0.	In $5\frac{1}{2}$ fathoms, 10 miles from entrance. Has 3 masts; baskets on fore and main; signals from mizen. N. coast, Yellow Sea. From April 1 to Nov. 1. Steam Fog-horn ev. 10 secs.	..	33	8	1867

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. in Miles.	Visible in Miles.	Year established
<b>JAPAN.</b>						
Lightvessels on the Coast of Japan lower their lights when out of position. In thick weather a bell is struck every 5 minutes. Half-hours are regularly struck at all times.						
<b>SATANO MISAKI</b> One bright fixed light	30 58.5 130 40.	Iron tower, white, 35 ft. high, on small island off Cape Chichakoff, or Satano-Misaki, S. point of Kiusiu. Obscured landward, from N.N.W. $\frac{1}{2}$ W. to N.E. by E. $\frac{1}{2}$ E. ....	1b   200   21   1870			
<b>NAGASAKI</b> One bright fixed light	32 43. 129 46.	White iron tower, 38 ft. high, on N. point of Iwo-Sima, at entrance to harbour. Masked landward to outside of Mitzuse Rocks, from S.W. by S. to E. $\frac{1}{2}$ S. ....	..   205   15   1870 18 1/2			
<b>Taske Harbour</b> One bright fixed light	33 23.5 129 33.2	On N. side of entrance .....	..   ..   ..   ....			
<b>Yebosi Sima</b> One fixed bright light	33 41.5 129 58.8	White octagonal iron tower, 44 feet high, on summit of Yebosi Island .....	2a   182   20   1875			
<b>TSUNO SIMA (Kado Sima)</b> One flash. lt. ev. 10 s.	34 21.5 130 50.	Granite tower, 100 ft. high, on N.W. pt. of Tsuno Sima, W. coast of Nipon. Lt. vis. seaward betw. S. $\frac{1}{2}$ E. and N.E. by E. ....	1b   142   18   1876			
<b>Niegata</b> One fixed light	37 57. 139 4.	Seldom exhibited .....	..   ..   ..   1867			
<b>Fushiki</b> One fixed bright light	36 47. 137 5.	Toyama Bay. Lt.-ho. of wood, painted white, 33 ft. high, on N.W. side of river entrance. Good anchorage with Lt.-ho. S.S.W. $\frac{1}{2}$ W., distant $\frac{1}{4}$ mile .....	..   38   10   1878			
<b>SIMONOSEKI STRAIT</b>						
<b>Boekuren Island</b> One bright fixed lt.	33 59.2 130 52.4	Granite tower, 25 ft. high, on E. end of island, at W. entrance of strait. Shown from N.E. $\frac{1}{2}$ N. to S. by W. $\frac{1}{2}$ W. ....	4a   89   12   1872			
<b>Isaki</b> One fix. red or br. lt.	33 58. 131 1.	Granite tower, 31 ft. high, on N.E. extreme of point, at W. entrance of strait. Lt. is red Northward and East, from W. by N. to S.E. $\frac{1}{2}$ E.; thence br. to S. $\frac{1}{2}$ W. Bearing N.W. $\frac{1}{2}$ W., on red and bright lts., clears shoals off Motoyama .....	4a   122   17   1872			
<b>Shirosa or Low Reef</b> One fixed red light	33 59.5 130 47.4	Temporary white building on S. end of reef, $\frac{1}{4}$ mile S.W. of Ai-Sima. ....	..   42   10   1872			
<b>SETO UCHI or INLAND SEA</b>						
<b>Fuku Ura</b> One fixed light	33 57.5 130 56.	.....	..   ..   ..   ....			
<b>ISAKI POINT</b> One bright fixed lt.	33 58.2 131 1.	On N.E. extreme of Kiusiu Island .....	..   ..   12   1865			
<b>Oku Mura</b> One fixed light	34 10.3 132 52.8	.....	..   ..   ..   1861			
<b>NUBE SIMA</b> One fixed bright lt.	34 23. 133 49.	Granite tower, 31 ft. high, on summit of island, near S. extreme of Yo Sima, Bingo Nada ...	3a   85   15   1873			
<b>TSURI SIMA</b> One bright fixed lt.	33 53. 132 38.2	Granite tower, 30 ft. high, on N.W. point of island. Obscured landward from S. by W. to E. by N. $\frac{1}{2}$ N. ....	3a   286   20   1873			
<b>Mi-hara</b> One fixed light	34 24. 133 7.	.....	..   ..   ..   1861			
<b>Akasi</b> One fixed light	34 39. 134 59.1	.....	..   ..   ..   1861			
<b>AWADJI ISLAND</b> One bright fixed lt.	34 36.7 135 0.5	Stone tower, 15 ft. high, on N. point of the island. Shown southward, from E. round to S.W. by W. $\frac{1}{2}$ W. ....	1a   158   18   1871			
<b>Mieco</b> One fixed light	34 38. 135 3.	.....	..   ..   ..   1866			
<b>Wada Misaki</b> One red fixed light	34 39.5 135 12.	Octagonal white tower, 16 ft. high .....	..   52   10   1871			

Name and Character of Light.	Lat. N. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SETO UCHI or INLAND SEA—(continued).</b>						
<b>Kobé</b> One fixed green lt.	34 41.2 135 12.5	In Gulf of Osaka. Shown from staff, 34 feet high, on East pier .....	..	42	6	1877
<b>Oösaka River</b> One bright fixed lt.	34 39.7 135 26.6	Square white tower, 30 ft. high, on Temp san Fort .....	..	53	10	1871
<b>Kishu Gawa Entrance</b> One fixed red light	34 37.8 135 27.8	From outer extr. of southern embankment at Kishu Gawa entr., 2 miles S.S.E. from Osaka Bar. Brick lt.-ho., 29 ft. high, black and white horizontal bands.....	6a	40	8	1878
<b>Sakai River</b> One fixed light	34 35.2 135 28.	On the fort .....	..	..	5	1866
<b>ISUMI STRAIT</b> One fixed bright light	34 16.7 135 0.5	Granite tower, 21 ft. high, on West end of Tomangai Island, in centre of strait.....	3a	208	19	1872
<b>SIWO-MISAKI</b> One fixed bright light	33 26.3 135 46.3	Stone lt.-ho., painted white, 60 ft. high. Lt. shown seaward betw. S. 84° E. & N. 46° W.	1a	163	20	1878
<b>Ō Ō SIMA</b> One br. rev. lt., 1 min	33 28. 135 52.	On E. point of island; bright half a minute, eclipsed half a minute .....	..	130	18	1870
<b>Matoya</b> One br. rev. lt., 1 min.	34 22. 136 54.8	White wooden tower on Tonio or Anod Saki, the S. head of entrance .....	4b	102	15	1873
<b>Toba Harbour</b> One fixed bright light	34 30.7 136 54.	Brick tower, 28 ft. high, on Suga Sima, at entrance to harbour, on W. side of Oware Bay .....	4a	176	15	1873
<b>OMAE SAKI</b> One br. rev. lt. $\frac{1}{2}$ min.	34 36. 138 14.3	White lt.-ho., 57 ft. high, on Sand hill, S. part of cape, W. point of entr. to Suruga Gulf. Shown from W. by N. & N. by the S. to N.E.	1b	172	19	1874
<b>Iro-o-Saki</b> One red fixed light	34 36. 138 51.5	Octagonal white tower, 20 ft. high .....	6a	185	16	1871
<b>ROCK ID. (Mikamoto)</b> One bright fixed light	34 24.3 138 57.2	White stone tower, 75 ft. high, on Rock Island, off Sineda harbour .....	1a	164	20	1871
<b>YEDO GULF</b>						
<b>JOKA-SIMA</b> One green fixed lt.	35 9. 139 37.	On W. end of Id. Lt. is green over arc of 30° from S.E. & E. to E. by N. .....	4a	106	9	1870
						1875
<b>SAGAMI MI-SAKI</b> One br. flashing lt.	35 8. 139 41.	Tower, 36 feet high, on W. side of entrance. Flash every 10 secs. Lt. is bright southward, from W. by S. to N.E. & E.; thence red to N.N.E. & E., over the Plymouth Rocks .....	..	110	16	1871
<b>KANON SAKI</b> One bright fixed lt. Lower red light	35 14.7 139 44.3	Square stone tower, on W. pt. of entr. Shown from N.N.E. & E. to S.S.E. & E. A red sector of lt. is shown from window, 32 ft. below principal lt., betw. N. & W. (cutting 2 cables W. of Saratoga Spit buoy) and N.N.E. ....	4a	170	14	1869
			..	146	7	1878
<b>Yokohama Bay Lt.-V.</b> One fixed red light	.....	Two masts; ball at fore; at extreme of shoal water off Mandarin Bluff .....	..	36	10	1870
<b>Yedo Bay</b> 1. One fixed red lt. 2. One fix. green lt.	..... 35 31.6 139 47.3	1. At E. entrance to Tsukidji Channel..... 2. White iron tower in 7 ft. water, off Hameda Pt., S. pt. of Yedo anchorage. Lt. vis. over bay betw. S.W. by W. & N.N.W. & W.	4a 4a	53 40	9 8	1870 1875
<b>NOSIMA POINT</b> One bright fixed lt.	34 53.3 139 51.4	Octagonal tower on E. side of entrance, E. of Mela Head .....	1a	134	20	1870

## JAPAN, TARTARY.

## LIGHOUSEES.

## KAMCHATKA.

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
INUBOYE SAKI One rev. br. lt. $\frac{1}{2}$ m.	35 43.5 140 53.5	Circular brick tower, 105 feet high, painted white. Light obscured towards land.....	1b	168	19	1874
East Coast	37 20. 141 4.	One fixed light .....	..	..	..	1863
KINGKASAN ISLAND One fixed bright light	38 19. 141 36.	Granite tower, 28 ft. high, in Sendai B. y. Lt. shown betw. N. by E. and S.W. $\frac{1}{2}$ W.....	1a	178	19	1876
Kita-Kami River One bright fixed light	38 26. 141 15.	Fr m a staff on E. bank of river, in N. part of Sendai Bay, E. coast of Nipon .....	..	52	6	1874
SIRIYA SAKI One fixed bright light	41 26.2 141 29.4	Brick tower, 94 ft. high, painted white, on N.E. pt. of Nipon Id.; Lt. shown betw. S. & W. through E. and N. to S.W. by W. Rattler Rock lies $\frac{1}{4}$ m. N. 70° E. of lt.-ho. Fog-bell, 15 strokes a minute .....	2a	150	18	1876
Awomori One fixed red light	40 51.8 140 45.3	From staff, 100 yards from high water mark, in front of town. Strait of Tsugar .....	..	45	6	1874
Hakodadi Bay Lt.-Ves. One bright fixed light	41 47.5 140 44.7	At the extreme of bank extending from Point Anama, the N.W. point of the town; painted red, two masts, ball at the fore; in $\frac{1}{2}$ fms. Rock lies $\frac{1}{4}$ m. N. 70° E. of lt.-ho. Fog-bell, 12 strokes a minute .....	●	36	10	1866 1871
CAPE NOYSHAP One fixed bright light	43 21. 145 45.	White lt.-ho., 35 ft. high, on E. extr. of cape. Lt. shows seaward betw. S.S.W. $\frac{1}{2}$ W. and W.N.W. $\frac{1}{2}$ W. Fog-bell, 12 strokes a minute. April 1 to Dec. 15 .....	5a	74	10	1873 1877
Memore One fixed red light	43 20.8 145 35.	On N.E. extremity of Beulen Sina, S.W. side of entr. to anchorage. April 1 to Dec. 15 .....	..	75	6	1873

## GULF OF TARTARY.

Novgorod Port Building	42 33.7 131 10.	Building on Garnova Cape. Coal mines in the neighbourhood .....	..	..	..	....
Vladivostok One fixed bright light	43 1.7 131 58.	On South point of Scripelov or Skryploff Id., E. entrance to East Bosphorus Strait .....	..	150	15	1877
NAHODKA PORT Building	42 38. 133 0.5	Building on Pororotnoi Cape, American Gulf .....	..	..	..	....
OLGA PORT Building	43 22. 135 15.	Building on Tchikhatchew Island, at the entrance .....	..	..	..	....
PORT IMPERIAL Building	49 0. 140 27.	Building on Mouraviev Cape, at the entrance .....	..	..	..	....
SAGHALIN ISLAND One bright fixed light	50 50. 142 6.6	Square tower, 40 ft. high, on the slope of a steep hill near Dui. Shown from S.W. $\frac{1}{2}$ W. round West, to N. by E. $\frac{1}{2}$ E.....	●	374	15	1864
CASTRIES BAY One bright fixed light	51 26. 140 52.	Lt.-ho. red with wh'te lantern, 69 ft. within extr. of Kloster-Camp, or Quoin Point, in the Gulf of Tartary .....	●	262	8	1861 1878
River Amur One bright fixed light	53 7.3 140 41.8	Square white tower, 29 ft. high, on Constantine Battery, opposite to Nikolaeavsk .....	6a	40	8	1861

## KAMCHATKA.

DALNI One fixed bright light	52 52.5 158 47.	E. side of entrance, Avatchka Gulf. Shown from W. by S. northwards, to S.E. $\frac{1}{2}$ E. Telegraph to Petropaulski. Lighted occasionally .....	..	449	24	1851
Baboushkin Point One fixed bright light	52 54.7 158 42.6	On second point, W. side of entrance. (Uncertain) .....	..	294	19	....
Rakof One fixed bright light	52 57.5 158 43.6	On signal-station, $\frac{1}{2}$ a mile S. of entrance to Rakova Harbour. (Uncertain) .....	..	378	22	....

## AUSTRALIA.

## LIGHTHOUSES.

## SOUTH AUSTRALIA.

Character of Light.	Lat. S. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above L. W.	Visible in Miles.	Year established.
<b>AUSTRALIA.</b>						
CHAMPION BAY Fixed red leading lts.	28 44.6 114 37.4	Towers, upper square and 25 feet high, lower octagonal and 37 feet high; painted white, 202 yds. apart, on N. shore of bay. Lts. vis. through arc of 75° and in line, bearing E. by N. & N., lead betw. shoals off Moore Point & those off Four-fathom Bank .....	.. 4a	65 41	9 8	1877 1877
Moore Point One rev. br. lt. 40 s. Lower red light	28 46.8 114 35.	Champion Bay. From round iron tower, painted wh. Lower red lt. shown northward betw. N.N.E. & E. and N.E. by E. & E.; also to the southward betw. S. & E. (leading 2 miles W. of African Reef) and S.S.E. & E. ....	2b 4a	110 ..	18 ..	1873 ....
ROTTNEST ISLAND One br. rev. lt., 1 m.	32 0. 115 31.2	White tower, 64 ft. high, on centre of island...	..	197	20	1850
SWAN RIVER One fixed bright light	32 3.2 115 45.1	Stone tower on summit of Arthur Head, South entrance .....	..	92	14	1851
KING GEORGE SOUND One fixed bright light	35 4.3 118 3.3	Iron tower, 43 ft. high, 1,200 yds. within E. end of Breaksea Id.; opens when bearing N.E. & N.	3a	384	24	1858
Princess Royal Harb. One fixed bright lt.	35 2.6 117 55.2	Point King, North entrance .....	3a	37	10	1858
<b>SOUTH AUSTRALIA.</b>						
SPENCER GULF Port Augusta One fixed bright lt.	33 3.3 137 46.5	From lt.-wes., moored in 9 fms., about 2 miles N.W. of N. end of Eastern Shoal .....	..	..	8	1878
Tipara Reef Rev. br. lt. ev. $\frac{1}{2}$ m.	34 3. 137 24.	From iron pile lighthouse on reef. Lightvessel discontinued .....	1b	100	16	1877
INVESTIGATOR STR. .....	.....	Lt.-ho., 40 ft. high, building on Althorpe South Id. Rev. br. lt. ev. 15 secs., and red sector over Emnes Reef and S.W. rock .....	..	..	..	....
BORDA, or FLINDERS CAPE One rev. lt., $\frac{1}{2}$ min.	35 45.3 136 38.	Square tower, 60 ft. high, on N.W. point of Kangaroo Island. Flashes alternately bright and red. Shown from S.W. by S. to N.E. by E. ....	●	510	30	1858
ST. VINCENT GULF TROUBRIDGE SHOAL One intermit. br. lt.	35 7.3 137 51.3	Iron tower, 78 ft. high, red & white bands, on centre of Id. Bright 24 secs., dark 36 secs.	●	80	16	1856
PORT ADELAIDE One br. rev. lt. $\frac{1}{2}$ m.	34 48.1 138 29.8	Iron tower, red, surrounded by pilcs, on S. side of outer bar of the creek .....	1b	80	17	1839
Lefevre's Peninsula One fixed green lt.	34 50.9 138 30.2	End of jetty. Pilot station. Shown westward, from S.W. by W. to N.W. by N. ....	..	27	8	1860
Glenelg Jetty One fixed red light Two fixed bright lts.	34 59.5 138 33.	Outer jetty. For mail steamers .....	..	29	6	1859
CAPE JERVIS One bright fixed lt.	35 37. 138 7.5	Shown from S.S.W. & W. to N. & W. Reef projects 1,800 ft. S.W. of lighthouse .....	..	..	13	1871
CAPE WILLOUGHBY One rev. br. lt., $1\frac{1}{2}$ m.	35 51.1 138 9.6	Sturt Lighthouse; a white tower, 75 ft. high, on S.E. point of Kangaroo Island. Shown southward and eastward, from S.W. to N. by W. & W. ....	●	247	24	1852
CAPE JAFFA One br. rev. lt., $\frac{1}{2}$ m.	36 55. 139 36.	A screw pile lighthouse, 70 ft. high, on centre of Margaret Brock Reef, off Cape Jaffa, or Bernouilli .....	1b	100	16	1872
CAPE NORTHUMBER- LAND One rev. bright, red, & green light, 1 min.	38 3. 140 37.7	Tower, 28 ft. high, on cape. Flashes bright red, and green, alternately. Shown from E. by N. & N. to W.N.W. ....	●	123	18	1859
Murray River	35 31.	A revolving light is shown on Point Malcolm, Lake Alexandrina .....	5b	70	10	1878
Rivoli Bay Fl. br. lt. ev. 10 secs.	37 30.6 140 1.3	White lighthouse on Penguin Island, N. end of Rivoli Bay .....	..	80	12	1878

## AUSTRALIA.

## LIGHTHOUSES.

## VICTORIA.

Name and Character of Light.	Lat. S. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>VICTORIA.</b>						
CAPE BRIDGEWATER, OR CAPE NELSON <i>Proposed</i>	38 22. 141 19.	Lighthouse proposed for one of these capes...				
Portland Bay 1. One fixed <i>red</i> light 2. One <i>green</i> light	38 3. 141 39.	1. Red lt. on Observatory Hill. Shown from S.E. to N. by W. .... 2. Green lt. on end of old jetty. Lifeboat station .....	4a	116   13   4		1859
Port Fairy 1. One fix. & flash. <i>red</i> lt. 2. One fixed <i>green</i> lt.	38 24. 142 20.	1. S.E. part of Griffith Island. Red flash ev. 3 minutes. Lifeboat station .... 2. On Look-out Hill, 500 yds. S.W. by W. from end of jetty. Shown betw. N. and E.N.E.; may be steered for as soon as seen .....	4o	41   9   3	1859 1872	
Warrnambool Bay 1. One fixed bright lt. 2. One <i>red</i> fixed light 3. One <i>green</i> light	38 26. 142 32.	1. Bright lt. from a tower on site of obelisk in front of town. Shown from W. round S. to S.E. .... 2. Red lt. from lower obelisk. Shown from S. & W. to S.E. In line with bright lt., leads in. Lifeboat station .... 3. Green light from end of jetty .....		109   14   87   5	1859 1871 1860 1871	
<b>BASS STRAIT</b>						
CAPE OTWAY One rev. br. lt., 1 m.	38 51. 143 34.	White tower, 62 ft. high, on S.W. extremity. A dangerous reef $\frac{1}{2}$ of a mile to S.S.E. ....	●	300   24		1848
KING ISLAND One fixed bright lt.	39 35. 143 57.	White tower, 145 ft. high, on N. point, or Cape Wickham. Shown from S.S.W. & W., round southward, to E.S.E. ....		280   24		1861
<b>PORt PHILLIP</b>						
Lonsdale Point One <i>green</i> or <i>red</i> lt.	38 17. 144 39.	Light green outside danger, from S. by E. to S.E. & E.; red inside danger, toward Neptun Point and the harbour, to E. by N. Mortar and Rocket station. Whistle-buoy in 12 fms., 4 miles to S.W. by W. ....		..   ..   7		1863
South Channel Lead-ing Lights	.....	Leading lts. for S. Channel. Eastern lt., immediately under Arthur's Seat, shows red betw. N. by E. & N.W. & W.; wh. over Middle Ground, betw. N.W. & W. and W. by S. & S. A br. lt., 40 ft. b low this lt., is shown betw. the same bearings as the red lt. Western lt. from pile lt.-ho., on S. side of channel, shows red between E. & N. and S.W. & S.; white over Great Sand, from S.W. & S. to S.S.E., and is obscured to the N.E., between N.N.W. and E. & N.				
SHORTLAND BLUFF 1. High lt. br. & fix. 2. Low lt. br. or <i>red</i>	38 16.4 144 39.8	1. High light-tower, gray, 81 ft. high, on W. side of entrance, $\frac{1}{2}$ miles N.E. & E. from Point Lonsdale light. Shows in the offing, from W. by S. to S., but near entrance, from S.W. by W. to S. Within the heads it shows from S.W. by W. eastward, to N.E. by E. .... 2. Low light-tower, white, 69 feet high, at 352 yards S.W. by S. from the high light. In one, they lead in. The low light shows bright from about S.W. by W. to S.W., over the dangers off Point Lonsdale; it is red in the fairway from S.W. southward, to S.S.W.; thence bright, eastward, to E. by S., from over the Corsair Rock to the edge of the South Channel. A lifeboat station .....	2a	130   17   90   14   10		1842 1863
Queenscliff	.....	Green light on end of jetty .....		..   ..   ..		
Sorrento	.....	Green lt. from lamp-post on end of jetty .....		..   ..   ..	2	1876
Fromana	.....	Green light on end of jetty .....		..   ..   ..		
<b>SWAN SPIT</b>						
One fix. br. or <i>red</i> lt.	.....	Pile lighthouse, red, 38 ft. high, in 15 ft. water, at S. entrance of West Channel. Shows br. from about W.S.W. to S.W. & W.; thence a red ray over entrance of West Channel to S.W. & S.; thence bright, eastward, to S. by E. & E., and thence red to N. & E. A gong in thick weather .....		..   38   8		1863
West Channel Lt.-V. Two bright fix. lts.	.....	Painted red; three masts; in 3 fms., at N. end of channel. Gong every 5 minutes in fogs...	●	50   8		1854
Portarlington 1. One fix. <i>green</i> lt. 2. One fixed <i>red</i> lt.	.....	1. On end of jetty; visible from W. by S. & S., by the South, to S.E. by E. & E. .... 2. Shown betw. E.N.E. & N.W. by W., clearing Prince George Bank and Richard Shoal .....	..	22   5		1872
Geelong Lightvessel One bright fixed lt.	.....	Painted red; one mast and ball; in 2 fms., on starboard side, near Bird Rocks. Gong ev. 10 minutes in fogs; tide-signals .....	●	27   7		1857

Character of Light.	Lat. S. Long. E. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>PORt PHILLIP—(continued).</b>						
Geelong	.....	Bright lt. on end of steam-boat jetty ..... Bright lt. on pier-head.....	..	..	3	1857
Melbourne Light-Ves.	37 53.	Painted red; one mast and ball; in 5 fathoms, off Geelong Point. Flash every $\frac{1}{2}$ min.	●	40	10	1859
One rev. bright lt.	144 55.3	Gong in fogs. Pass to southward .....				
Williamstown	.....	Red lt. on end of breakwater. Red lt. on outer black dolphin. Green lt. on Elbow beacon. Bright lt. on Williamstown beacon, but shows red up the first reach of the Yarra ..	..	..	3	1857
Sandridge	.....	Red lt. on end of old jetty; green lt. on railway pier ..	..	..	3	1857
St. Leonards	.....	Green light on end of jetty.....	..	..	3	1876
Schnapper Point	.....	One bright fixed light .....	..	50	10	1870
		Red light on end of jetty.....	..	..	3	....
CAPE SCHANK	38 30.	Stone tower, 70 ft. high, on highest part of S. extremity. Fixed it., with flash every 2 minutes. Shown from E. $\frac{1}{4}$ S. to N.W. $\frac{1}{4}$ W.	1d	328	23	1859
One fixed & flash. lt.	144 54.	A reef $\frac{1}{2}$ a mile to S.S.E. ....				
Western Port	38 28.6	On Flinders Jetty. Sails should not anchor in the br. ray, betw. S.E. $\frac{1}{4}$ S. & E. $\frac{1}{4}$ N., to avoid the telegraph cable.....	..	21	4	1869
One bright or red lt.	145 1.5					
WILSON PROMONTORY	39 7.9	White stone tower, 70 ft. high, on S.E. point.	●	383	24	1859
One fixed bright light	146 25.6	Shown from N.N.E., round to W.S.W. ....				
PORt ALBERT	38 46.	White stone tower, 42 ft. high, on E. part of Latrobe Island, Corner Inlet. Fixed light, with flash every 3 min. Shown from E. by N. southward, to S.W. Lifeboat station.....	4d	40	9	1859
One fixed & flash. lt.	146 40.6					
DEAL ISLAND	39 29.	Tower, 48 ft. high, on summit of S.W. side; upper part red, lower white. (The light is often hidden by fogs) .....	●	950	36	1846
One rev. br. lt., 1 $\frac{1}{2}$ m.	147 21.6					
CAPE HOWE	37 34.7	Granite tower, 156 ft. high, on S.E. point of Gabo Island, $\frac{5}{8}$ miles S.W. $\frac{1}{4}$ S. of Cape Howe. Shown from W. $\frac{1}{4}$ S. to N.E. by N.	1a	179	17	1862
One fixed bright light	149 55.1					
<b>NEW SOUTH WALES.</b>						
Eden Harbour	37 4.5	White tower, 45 ft. high, on Lookout Point, Twofold Bay .....	●	140	9	1862
One fixed red light	149 55.6					
Ulladulla	35 21.5	One green pier light .....	..	43	7	1873
	150 30.					
JERVIS BAY	35 9.3	White tower, 61 ft. high, at 1 mile N. of cape St. George. Light is bright, red, and green, alternately .....	●	224	18	1860
One altern. lt. ev. $\frac{1}{2}$ m.	150 47.4				14	
Wollongong	34 25.	On end of breakwater. Shown between N.N.E. and E. by S. $\frac{1}{4}$ S. ....	..	56	5	1872
One fixed red light	150 55.5					
<b>PORt JACKSON</b>						
SOUTH HEAD	33 51.2	Macquarie Tower, white, 76 ft. high. Shown from S.E. by S. to N.E. $\frac{1}{4}$ E. Electric telegraph to Sydney.....	●	344	21	1817
One rev. br. lt., 1 $\frac{1}{2}$ m.	151 18.3					
HORNBY	33 51.6	Tower, 50 ft. high, red and white vertical stripes, on edge of cliff, inner S. head. Shown from S.E. by S., eastward, to N.E. $\frac{1}{4}$ E. A lifeboat station .....	●	90	14	1858
One fixed bright lt.	151 18.7					
Sow and Pigs Shoal	33 50.1	Bramble Lightvessel, painted red; in 22 ft., on N.W. edge of shoal. Light vertical. A red flag by day .....	●	28	6	1836
Lightvessel						
Two fixed bright lts.	151 19.					
Fort Denison	33 51.5	On tower. Garden Island is in longitude 151° 14' 47" E. ....	..	..	..	1858
One fixed red light	151 14.6					

Name and Character of Light.	Lat. S. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Depar- tus of Apparatus	Height above H. W. Visible in Miles.	Year estab- lished.
<b>BROKEN BAY</b> Two bright fixed lts.	33 35. 151 20.	On Barenjo, or Barranhuey, the inner S. head. In one, N.N.W., 393 yds. apart. Both lts. masked, from S. to S.S.E. & E. over the land from the outer S. head. They are visible in safe approach. Temporary .....	..   347 ..   315	8   8	1868
<b>NEWCASTLE</b> Nobby Head One bright fixed lt.	32 55.3 151 49.3	On S. side of entrance to Port Hunter. Shown eastward, from S. by W. to N.E. by E. Tidal signals from a mast near .....	●   115	17	1858
North Channel Two fixed lights	.....	Red and bright lts. on breakwater. In one, W. by N., 33 yds. apart, lead in .....	..   ..	..   ..	....
Fairway Lights Two fixed lights	.....	On a hill at the back of the town. Upper beacon, red, shows a bright light. Lower beacon, white, shows a red light. In one, S.W. & S., 76 yds. apart, lead in .....	..   ..	..   ..	1866
<b>PORT STEPHENS</b> 1. One rev.lt. every m. 2. One fix. br. or red lt.	32 45.2 152 13.3	1. White tower, 70 ft. high, on S. side of entrance. Shown from S.W. to N.E. by N. Should not be approached within a mile. Light red and white alternately .. 2. On Nelson Head. Is br. seaward, eclipsed over entrance shoal, and red after shoal is passed .....	●   126 ..   ..	17   9	1862   1872
<b>SUGARLOAF POINT</b> Revol. br. lt., $\frac{1}{2}$ min.	32 26.2 152 33.3	After green lt. as warning from Seal Rocks and adjacent dangers. Shown betw. N. and N.W. by W. & S., but not vis. from Edith Breaker .....	1b   258 ..   ..	22   3	1875   1875
Manning River One fixed bright light	31 52.8 152 42.6	At the pilot station .....	..   ..	6	1866
Clarence River One fixed bright light	29 25.5 153 23.2	At the pilot station .....	..   ..	6	1866
Richmond River Two bright fixed lts.	28 51.5 153 35.9	One at pilot station. An additional bright lt. shown. In one, W.N.W., 150 ft. apart .....	..   ..	6   8	1866   1872
Tweed River One fixed bright light	28 11.2 153 35.5	On Fingal Head .....	..   ..	7	1872
<b>MORETON BAY</b>					
<b>MORETON ISLAND</b> One br. rev. lt., 1 m.	27 2.3 153 29.	White stone tower, 70 ft. high, on N.E. point. Electric telegraph from signal station to Brisbane .....	●   382	26	1857
Yellow Patch One bright fixed lt.	27 2. 153 27.7	White tower, 45 ft. high, $\frac{1}{2}$ mile S.W. from N. pt. of Id. Lt. br. betw. N. & E. & N.W. by W. & W., red from N.W. by W. & W. to fairway buoy or N.W. by W. & W., and br. from N.W. by W. & W. to W. & S. Seaward, br. lt. in sight leads W. of Hutchinson Shoal, & N.E. of North Banks .....	5a   49	11	1868   1878
Comboyuro Point One br. or red fix. lt.	27 4.1 153 23.	Light red seaward, from land to N. by E. & E. Hidden over E. banks; thence to N.N.W. Bright thence to W.N.W., then masked to S. & W., and thence bright to S. by E. .....	5a   20	9	1862
Cowan Cowan Point One br. or red fix. lt.	27 8. 153 22.1	White tower, 37 ft. high. Light bright from N. by W. & W. to W. & S.; thence hidden to S.W. & S.; thence bright to S.S.W.; then hidden to S. by W. & W.; thence red to about S. .....	5a   38	10	1864
East Beacon, red light	.....	On iron screw piles, 560 yds. from Bar light-vessel .....	6a   22	7	1862
Brisbane Bar Lt.-Ves. One bright fixed lt.	27 21. 153 10.	Painted red; lies inside the bar. Tide signals, day and night, to show depth of water on the bar and in the cutting .....	6a   34	10	1860
West Channel	.....	Green lt. on piles, 3 cables S.W. of lt.-vessel ..	..   10	..	1866
West Beacon, bright lt.	.....	Red iron piles, $\frac{1}{2}$ of a mile S. of lightvessel ..	6a   22	7	....
Cleveland Point One bright fixed lt.	27 30.5 153 18.7	White tower, 39 ft. high, on extremity of point .....	6a   38	10	....

Name and Character of Light.	Lat. S. Long. E. • ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>QUEENSLAND.</b>						
<b>SANDY CAPE</b> One br. rev. lt., 2 min.	24 43.3 153 13.7	White iron tower, 99 ft. high, on highest hill on cape; N. part of Great Sandy Island.....	1b   400   27   1870			
<b>MARYBOROUGH</b> 1. One fixed light 2. One fixed red light	25 16.3 152 59.5	1. White tower, 84 ft. high, on Middle Bluff of Woody Island, Hervey Bay. Shows red from N.N.E. $\frac{1}{4}$ E. to N. $\frac{1}{4}$ W. Hidden betw. S.S.E. $\frac{1}{4}$ E. and S. by E. $\frac{1}{4}$ E. .... 2. White tower, 84 ft. high, on North Bluff of Woody Island. Shown from N.E. $\frac{1}{4}$ E. to E. $\frac{1}{4}$ N., 2 miles N.W. $\frac{1}{4}$ W. from Middle Bluff lt. In one lead over the bar, S.W. of the Middle Banks .....	4a   215   19   1867 4a   130   16   1867			
<b>Burnett River</b> 1. One fixed bright lt. 2. Two fix. leading lts.	24 45. 152 25.	1. Lt.-house white, on S. head. Lt. vis. betw. S.E. by E. and N.W. by W. Do not approach Burnett Banks nearer than 3 miles till this light bears W.S.W., when steer for it..... 2. In one lead across the bar .....	●   33   10   1873 ●   33   10   1877 ●   33   10   1877			
<b>Lady Elliot Island</b> One br. revolving lt.	24 7. 152 45.3	White iron tower on island, in Curtis Channel. Flashes every half minute .....	4b   67   10   1866			
<b>BUSTARD HEAD</b> 1. One fix. & flash. lt. 2. One fixed light	24 1.3 151 42.	1. White tower, 58 ft. high, on S.E. part of cape. Fix. lt., with a brighter flash ev. 2 m. A red ray over Outer Rock to N. $\frac{1}{4}$ E. The lt. is red from W.N.W. to the land .....	2c   330   24   1868 5a   280   ..   1876			
<b>PORT CURTIS</b>						
<b>Gatcombe Head</b> 1. One bright or red fixed light 2. Reflected light	23 53.1 151 23.7	1. White tower, 30 ft. high, on S.E. pt. of head. Lt. br. seaward, red towards N. Channel betw. N.E. $\frac{1}{4}$ N. and E. by N. $\frac{1}{4}$ N., and also betw. S.W. and S.S.W. in S. Channel .....	5a   66   10   1868			
<b>2. A lt. reflected from Gatcombe Head, on red iron beacon on S.E. part of Oyster Rock.</b> Shown from East Banks betw. S.W. by W. $\frac{1}{4}$ W. and S.E. by S., & also south-westward betw. W. by S. $\frac{1}{4}$ S. & S. by W. This beacon S.W. by W. $\frac{1}{4}$ W. leads into N. Channel, and bearing N. by E., in line with Gatcombe Head lt., clears Junction buoy .....		..   18   4   1868				
<b>CAPE CAPRICORN</b> Rev. br. lt. ev. min.	23 24.2 151 15.8	Round stone tower, 39 ft. high. Electric telegraph and Signal-station.....	3b   310   22   1875			
<b>Keppel Bay</b> 1. Two fixed lights 2. Two fix. bright lts.	23 27.1 151 2.9	1. At pilot station. In line N.W. $\frac{1}{4}$ N., point out Timandra Bank buoy .....	●   ..   7   1865 ..   ..   ..   1876			
<b>FitzRoy Riv. Lt.-Vessels</b> 1. One bright fixed lt. 2. One red fixed light	23 32.1 150 57.1	2. Shown from Little S. Hill. When in line lead over Timandra Bank buoy. Upper lt. eclipsed S. of N.W. by N., but bright in S.W.-ly direction .....				
<b>St. Lawrence Creek</b> One fixed bright lt.	22 18.5 149 34.	1. Painted red; in 7 fathoms, Port of Rockhampton; below .....	a   44   8   1866			
<b>Pioneer River</b> One fixed light	21 10.2 149 12.5	2. At the crossing-place at the upper flats Night and day tide-signals .....	6a   18   5   1866 ..   ..   ..   1878			
<b>PORT DENISON</b> One fix. br. or red lt.	19 59.9 148 17.7	From flagstaff at pilot-station .....	..   220   10   1874			
<b>C. BOWLING GREEN</b> One br. rev. lt. ev. min.	19 19.3 147 27.6	Temporary; from the Signal-station on Flat-top Id., off the entrance; obscured when bearing W.N.W. by Round-top Island. Tide signals at Pilot-station .....				
<b>Cleveland Bay</b> 1. One fixed red light 2. One fixed red light	..... .....	White tower, with red dome, 30 ft. high, on N. Head Islet. White seaward, red between N. by W. $\frac{1}{4}$ W. and N. $\frac{1}{4}$ E. .... Lt.-house moved 120 yds. S.W. of its original position .....	5a   86   11   1865 ..   70   10   1874 ..   ..   ..   1878			
<b>Trinity Bay</b>	.....	1. From pile at outer end of breakwater, W. side of Ross Creek, Cleveland Bay .....	..   ..   ..   1876			
<b>C. MELVILLE LT.-V.</b> One fixed bright lt.	14 7.7 144 31.5	2. Shown on end of jetty works at Magazine Island .....	..   ..   ..   1878			
<b>No. VI. (Claremont) Id.</b> Lightvessel	13 28.7 143 44.3	Fixed bright light from westernmost Low Islet. Lighthouse to be constructed .....	..   40   8   1878			
<b>Piper Islands Lt.-Ves.</b>	12 14. 143 16.1	In 14 fms. W. $\frac{1}{4}$ S. from Pipon Islets bon., and N. $\frac{1}{4}$ E. from Channel Rock. Pass N. oft.-ves.	..   35   10   1878			
		Inner Route to Torres Strait. Moored West of Id. in 12 fms., with Heath Rock beacon bearing W. by N. $\frac{1}{4}$ N., 2 $\frac{1}{2}$ miles distant .....	a   35   10   1876			
		Inner Route. Moored in 13 fms., with North Piper Id., W. by S. $\frac{1}{4}$ S., and K. Islet N. $\frac{1}{4}$ E.	a   35   10   1876			

Name and Character of Light.	Lat. S. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>TASMANIA.</b>						
Eddystone Point	.....	N.E. Coast of Tasmania. Light-ho. proposed	..   ..   ..   ..	..	....	
<b>SWAN ISLAND</b>	40 44.	Red and white tower, 74 ft. high, on N. point	1b   110   14   1845			
One rev. br. lt., 1 min.	148 9.					
<b>GOOSE ISLAND</b>	40 18.7	Red and white tower, 74 ft. high. Chappel Island, near South point .....	1a   135   15   1846			
One fixed bright light	147 48.					
<b>DALRYMPLE PORT</b>	41 3.4	Red and white tower, 36 ft. high, on low head, E. entrance to Tamar River .....	•   142   15   ....			
One rev. br. lt., 1 $\frac{1}{2}$ m.	146 48.3					
<b>D'ENTRECASTEAUX CHANNEL</b>	43 29.	White tower, 44 ft. high, on Cape Bruny, S. W. point .....	•   335   22   1838			
One rev. br. lt., 1 $\frac{1}{2}$ m.	147 8.					
<b>HOBARTON</b>	43 3.7	Red tower, 40 ft., on Iron Pot Id., mouth of Riv. Derwent. Red lt. shown on Argyle St. wharf, green lt. on Franklin wharf, and br. lt. on Castray esplanade .....	a   65   10   .....			
One fixed bright light	147 26.					
<b>NEW ZEALAND.</b>						
<b>NORTH ISLAND.</b>						
<b>CAPE MARIA VAN DIEMEN</b>	.....	Lt.-ho., to show br. rev. lt. every min., to be completed about Jan. 1879, on islet lying half a mile N. W. from cape. Lower red light shown in direction of Columbia Reef .....	..   ..   ..   ..			
<b>Bay of Islands</b>	.....	At Port Russell, Kororarika Bay. From lamp-post on extr. of Government Wharf. Good anchorage in 4 $\frac{1}{2}$ fms., with lt. N.E. by E. $\frac{1}{2}$ E.	..   20   2   1878			
One fixed red light						
<b>HAURAKI GULF</b>	36 36.5	Red iron tower, 48 ft. high, on S.E. point of Tiri-Tiri-Matangi Island .....	2a   300   23   1865			
One fixed bright light	174 55.2					
<b>AUCKLAND</b>	.....	A pile lt.-ho. Lt. is red in Tehmaki Strait, &c., betw. E. $\frac{1}{2}$ E. and N.E. by E. $\frac{1}{2}$ E.; thence br. in fairway of Korehu Chan. to N.E. $\frac{1}{2}$ E.; thence gr. over Rangitoto Reef, &c., to N.N.W. $\frac{1}{2}$ W.; thence br. in fairway of Rangitoto Channel to N.W. $\frac{1}{2}$ N.; thence red over Rough Rock to W. by S. $\frac{1}{2}$ S.; thence br. to S.W. $\frac{1}{2}$ W. in fairway of harb.	5a   50   10   1872			
Bean Rocks						
One fixed light						
<b>Queen's Wharf</b>	.....	1. Shown triangularly on the East extremity 2. Horizontal, on the W. extr. of the wharf. 1 and 2 in line clear S. side of harbour .....	..   29   6   .....			
1. Three fix. br. lts.						
2. Two fixed br. lts.						
<b>Railway Wharf</b>	.....	Britomart Point. Two red lts. shown on the N.E. angle of the pier, and a bright light on the West end of the pier .....	..   ..   ..   ..			
<b>Pauhenehe Spit</b>	.....	Frith of Thames. Lt. buildings painted white, on extr. of spit, S. pt. of Ponia Pass, Tehmaki Strait. Lt. obscured over Pahiki Island ...	5a   50   ..   1878			
One fixed bright lt.						
<b>Graham's Town</b>	.....	1. On outer end of wharf, visible to E. betw. S.E. $\frac{1}{2}$ E. and N.N.W. $\frac{1}{2}$ W. 2. Guide for entering Kauerangi Creek; vis. to E. betw. S. & N.W. Anchor with Tararu lt. N.N.W. $\frac{1}{2}$ W., and wharf lt. S.E. by E. $\frac{1}{2}$ E.	..   18   2   ..			
1. One fix. green lt.						
2. One fixed red lt.						
<b>PORTLAND ISLAND</b>	39 18.	Lt.-ho. of wood, 28 ft. high, painted white, on S. pt. of Id. Lower red lt. shows only narrow sector over Bull Rock, N.E. 4 m. from lt.-ho.	..   300   24   1878			
One rev. br. lt. $\frac{1}{2}$ m.	177 53.					
Lower red light						
<b>NAPIER BLUFF</b>	39 29.	White tower, 20 ft. high, on the bluff in Hawke Bay. Lt. is shown from S.S.E. by the East to N. by E. Do not mistake this for the white sector of the lt. at Port Napier entrance .....	4a   160   18   1874			
One bright fixed light	176 56.					
<b>Napier Port (Ahuriri)</b>	39 28.7	1. At entr. of port. Lt. is red betw. N.W. by N. and N. by W. $\frac{1}{2}$ W., bright over anchorage from N. by W. $\frac{1}{2}$ W. to N.N.E. $\frac{1}{2}$ E., and red from N.N.E. $\frac{1}{2}$ E. to N.E. $\frac{1}{2}$ N. 2. At head of harbour works, Eastern Spit ...	..   ..   ..   ..			
1. One fixed light	176 55.2					
2. One fixed green lt.						
<b>PORT NICHOLSON</b>	41 22.	1. On summit of bold cliff, on eastern side of entrance to Port Nicholson, Cook Strait, Wellington .....	2a   450   30   1859			
Pencarrow Head	174 51.2	2. On Queen's Wharf .....				
1. One fixed br. lt.						
2. One red fixed lt.						
<b>Somes Island</b>	41 15.7	Octagonal iron tower, white. Light red on western, bright in mid-channel; green on eastern side of harbour. Bright lt. bearing N. $\frac{1}{2}$ W., leads up .....	4a   75   10   1866			
Red, white, & green light	174 52.7					
<b>Manawatu River</b>	40 27.2	1. From mast .....	..   ..   ..			
1. One fix. bright lt.	175 14.7	2. On S. shore of entr. Outer beacon, red, shows a green lt.; inner beacon, black, shows red lt. In line, lead over bar. Only shown when sufficient water over bar. Pilot and Signal-station on N. side of entrance .....	..   ..   ..			
2. Red and green leading lights						

Name and Character of Light.	Lat. S. Long. E. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Wanganui River One bright fixed light	39 57. 175 I.	On the flagstaff on the Castle Cliff, or N. head of the river .....	..	65	9	1872
New Plymouth	.....	Fixed bright light shown from flagstaff.....	..	75	..	1876
MANUKAU HARBOUR One bright fixed light	37 3.5 174 33.5	New white tower, 20 ft. high, on the brow of the S. head bluff, at $\frac{1}{4}$ mile W. by N. from Paratutai. Shown seaward between S. by E. $\frac{1}{4}$ E. and W. by N. $\frac{1}{4}$ N. .....	3a	385	26	1874
<b>MIDDLE AND SOUTH ISLANDS.</b>						
FAREWELL SPIT One revol. lt., 1 min.	40 33. 173 1.7	Timber framework, 118 ft. high, red & white bands. Br. lt., but red over Spit End, from S.E. $\frac{1}{4}$ S. to E. by S. $\frac{1}{4}$ S. Do not open red lt. within 4 miles. Hidden by land southward of W. by N. .....	2b	120	17	1870
Nelson Harbour 1. One fixed light 2. Two leading lights	41 15.1 173 17.1	1. From white tower on Boulder Bank. Betw. W. by S. and S.W. by S. light is red .....	..	..	..	...
2. On East shore, Upper beacon white shows bright lt.; lower red shows red lt. Occa- sional lt. is shown on Haul-ashore Island...						
NORTH BROTHERS ID. One flashing bright lt. every 10 secs.	41 6.5 174 27.3	Tower of wood, white, 28 ft. high, on Id., W. side of Cook Strait. Red light shown from lower part of tower, over Cook Rock, through an arc of 5 degrees .....	2e	258	22	1877
Picton Harbour One fixed red light	41 17.3 174 1.8	Queen Charlotte Sound. At end of wharf.....	•	20	6	1874
CAPE CAMPBELL One br. rev. lt., 1 min.	41 43.3 174 18.5	Open wood frame, 73 ft. high, red and white bands, on knoll at extreme of cape .....	2b	155	19	1870
PORT LYTTELTON	43 35.5	Tower, 30 feet high, on Godley or Cachalot Head, N. side of entrance. Shown seaward, from E. $\frac{1}{4}$ S. to N.N.W. $\frac{1}{4}$ W. .....	2a	450	29	1865
One bright fixed light	172 49.5					
Timaru	44 23.5	Wooden lt.-ho., 30 feet high, painted stone- colour. Lt. shown eastward betw. S.S.E. $\frac{1}{4}$ S. and N. by W. $\frac{1}{4}$ W. .....	5a	85	14	1873
CAPE WANBROW One fixed red light	45 7. 171 1.	Light is shown seaward between S.S.E. and N. by E. Bearing S. by W. indicates outer anchorage of Oamaru.....	..	..	15	1878
Omara	.....	Green lt. at N. end of breakwater. Shown betw. S.E. and N.N.E. When it cannot be lit, a red lt. between two white lts. is shown .....	..	16	3	1877
Moerangi	45 24.3	Lt.-ho., 28 ft. high, painted white, on S. pt. of Moerangi or Moeraki Peninsula .....	3a	170	19	1878
One fixed bright light	170 53.5					
OTAGO HARBOUR 1. Leading lights 2. One fixed red light 3. Lightvessel	..... ..... .....	1. Upper lt. green, lower lt. bright, N.N.E. & S.S.W., 300 yards apart. In one, lead over outer bar until red lt. at pilot station opens out. Shown betw. N. $41^{\circ}$ W. & N. $34^{\circ}$ E.... 2. From a beacon inside Tairau Head, at pilot station. Gong ev. 15 secs. in foggy weather 3. Moored inside inner bar in 12 ft., 1 $\frac{1}{2}$ cable S.W. by S. from first red beacon .....	..	36	6	1876
..... ..... .....			..	26	..	...
NUGGET POINT One bright fixed light	46 27. 169 21.	White tower, 31 ft. high, on outermost knob of S. point of Molyneux Bay .....	1a	252	23	1870
Waikawa Harbour	46 39.7	On S. point of entrance. (Uncertain).....	..	115	..	...
FOVEAUX STRAIT One br. rev. lt., $\frac{1}{2}$ min.	46 39.6 168 26.	Grey stone tower, 118 ft. high, on Dog Island, S.E. of Bluff Harbour.....	1b	150	18	1865
Centre Island One fixed bright or red light	46 25.5 167 52.5	Wooden lt.-ho., 20 ft. high, at S. extr. of Id., N. side of Strait. Lt. br. seaward between W. $\frac{1}{4}$ N. and E. by S., red from E. by S. to N. $\frac{1}{4}$ W., obscured betw. N. $\frac{1}{4}$ W. and N.W. $\frac{1}{4}$ W., and red betw. N.W. $\frac{1}{4}$ W. and W. $\frac{1}{4}$ N....	1a	265	22	1878
Puysegur Point	.....	N.W. pt. of entr. to Foveaux Strait. Flashing light every 10 seconds intended.....	..	..	..	1878
Okarito Lagoon	43 14.2	One fixed green light on mast at entrance.....	..	..	..	1866
Hokitika River One fixed bright light	42 45.2 170 57.3	On mast on N. side of entrance of Hokitika or Brunner River. Anchor with it bearing E.S.E. $\frac{1}{4}$ S or 3 miles off .....	..	..	..	1866
Grey River Bright, red and green lights	42 30. 171 11.	The entrance is marked by 2 fixed red lights on S. shore. A green lt. at extr. of works in progress, and a br. lt. on a mast on N. shore. Tidal Signals shown from mast on S. shore	..	..	..	1878
CAPE FOULWIND One rev. br. lt. $\frac{1}{2}$ min.	41 46. 171 34.	Lighthouse of wood, white, 53 ft. high .....	2b	190	19	1876
Buller River	.....	Bright lt. from flagstaff, and red lt. from bea- con in one lead over the bar .....	..	..	6	1876

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BRITISH AMERICA.</b>						
<b>NEWFOUNDLAND.</b>						
<b>BELLE ISLE</b> One fixed bright light	51 53. 55 22.3	White tower, 62 ft., on S. pt. of Id. April 1 & Dee. 15, from S.E. by S. southward to West, Fog Gun ev. hour. Depot for shipwrecks	1a   470   28   1858			
<b>CAPE NORMAN</b> One br. rev. lt., 2 min.	51 38. 55 53.7	White tower, 40 ft. high, on N. coast of Newfoundland, Strait of Belle Isle .....	●   138   20   1871			
<b>Greenly Island</b> One alternat. red & br. lt. every 3 min.	51 22.6 57 10.8	Lighthouse, 78 feet high, fawn colour, on S.W. pt. of Id. Lt. br. $\frac{1}{2}$ min., red $\frac{1}{2}$ min., br. $\frac{1}{2}$ min.; then eclips. $\frac{1}{2}$ min. Fog-gun ev. $\frac{1}{2}$ hour	●   100   15   1878			
<b>AMOUR POINT</b> One fixed bright light	51 27.6 56 50.9	White tower, 109 feet high, on S.E. side of Forteaux Bay, Coast of Labrador. From Apr. 1 to Dec. 15. Fog-whistle, 10 secs. ev. min.	2a   155   18   1858			
<b>POINT RICH</b> One br. flash. lt., 15 s.	50 41.8 57 25.5	White tower, 40 ft. high, on North point of Ingornachoir Bay .....	●   130   18   1871			
<b>Toulinguet Island</b> One revol. bright lt. $\frac{1}{2}$ m.	49 41.5 54 47.	Notre Dame Bay. Red brick tower; dwelling white on Long Point, North of island.....	●   335   27   1876			
<b>Cann Island</b> One fixed bright light	49 35. 54 10.5	S. side of Fogo Id., entrance of Seldom-comes Bay. Wooden tower .....	8a   85   12   1874			
<b>OFFER WADHAM ID.</b> One fixed bright light	49 35.7 53 43.5	Circular brick tower, on the island .....	a   96   12   1858			
<b>Greenspond Harbour</b> One fixed red light	49 3.6 53 42.4	Granite tower on Puffin Island, near entrance. Obscured towards the land, from S. by W. to E. by S. .....	4a   55   10   1873			
<b>CAPE BONAVISTA</b> One rev. br. and red lt.	48 41.9 53 5.2	Tower, 36 ft. high, striped red & white, vertically, on the cape. Lt. br. 15 secs., eclipsed 30 secs., red 15 secs., eclipsed 30 secs. ....	1b   150   16   1843			
<b>Catalina Harbour</b> One fixed bright light	48 30.2 53 2.7	White tower, on S. side of Green Island, Catalina Harbour, in Trinity Bay. Shown from E.N.E., seaward, to S.W. ....	●   92   15   1857			
<b>Trinity Harbour</b> One bright fixed light	48 22. 53 20.8	White tower on Fort Point, W. side of entrance .....	8a   75   11   1874			
<b>BACALHAU ISLAND</b> One rev. br. lt., 20 s.	48 8.6 52 47.8	Circular brick tower, 34 ft. high, half a mile from N. end of island. Hidden by land within 8 miles, when bearing N.N.E. $\frac{1}{2}$ E....	●   380   28   1858			
<b>Carbonear Island</b> One fixed bright light	47 44.3 53 9.4	In Conception Bay. White buildings with red roofs .....	a   195   16   1878			
<b>HARBOUR GRACE</b> 1. One revol. lt., $\frac{1}{2}$ m. 2. Two fix. lts., vertical	47 42.7 53 8.2	1. Square house, red and white stripes, on N. end of island, at entrance; two bright, one red flash. Shown from S.S.W. to N.N.E.... 2. On beach, N. side, 11 yds. apart. Bearing W. $\frac{1}{2}$ S. clear spit .....	●   150   20   1836 ●   50   10   1858			
<b>CAPE ST. FRANCIS</b> One fixed red light	47 48.5 52 47.2	White wooden building on S. point of entr. to Conception Bay. Fog-trumpet every min., blast 5 secs., silent 7 secs., blast 5 secs., silent 43 secs. ....	5a   123   12   1877			
<b>ST. JOHN'S</b> 1. One fixed bright lt. 2. Two fixed red lights	47 33.8 52 40.3	1. Square stone tower, 39 ft. high, on Fert Amherst, S. entr. of harb. Shown seaward, from E.N.E. to S.S.W. Gun ev. hour in fogs 2. In one, N.W. $\frac{1}{2}$ W., lead through Narrows .....	●   110   12   1852 ..   225   6   1863 ..   50   0   0			
<b>CAPE SPEAR</b> One rev. br. lt., 1 min.	47 31.2 52 36.9	Square tower, 38 ft. high, red & white bands, on the cape. Fog-trumpet, 7 secs. in ev. min. ....	●   264   22   1835			
<b>FERRYLAND HEAD</b> One bright fixed light	47 0. 52 51.	Red brick tower. Dwelling white .....	..   200   16   1871			
<b>CAPE RACE</b> One revol. lt., $\frac{1}{2}$ min.	46 39.2 53 2.6	Tower, 40 ft. high, on the cape, with S.E. side striped red and white, vertically. Shown seaward, from W.S.W. to E.N.E. A conical beacon, 50 yds. from lightho. A very powerful fog-whistle for 10 secs. in every min. ....	●   180   17   1856			
<b>CAPE PINE</b> One bright fixed light	46 37.1 53 31.7	Round iron tower, 56 ft. high, with red and white bands, on the cape. Shown from E. by N. seaward, to N.W. ....	..   314   24   1851			
<b>CAPE ST. MARY</b> One revol. lt., 1 min.	46 49.5 54 11.9	Circular brick tower, 40 ft. high, flashes red and bright alternately .....	1b   390   26   1860			
<b>GREAT BURIN ISLAND</b> One rev. br. lt. ev. min.	47 0.4 55 8.1	Circular tower, 25 ft. high, on Dodding Head, S. end of the island .....	2b   430   27   1858			

Note.—In case of a Fog-whistle being out of order, a Gun is usually substituted.

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>ST. PIERRE ISLAND</b> (Galantry Head) Flashing lt., 20 secs.	46 46.1 56 9.1	(French.) Square white tower, 36 feet high. Flashes red, white, and white alternately. Steam fog-whistle, 6 secs. ev. min. Betw. March 15 and Dec. 1, also when mail is due.	2c	210	36	1862
Canon Point One bright, one red lt.	46 47. 56 9.6	Outer lt. br., on rocks off Canon Point. In one, N.W., they lead through S. entrance .....	●	36	6	1862
St. Pierre Harbour One br. or red fix. lt.	.....	On Leconte Pt., N. side of S. entr. Shows br. in S. channel, and red thence to N.W. 1/2 W.	●	64	3	....
BRUNET ISLAND	47 15.5 55 51.8	Tower, 30 ft. high, on house on Mercer Head, S.E. extreme of island in Fortune Bay. Shown seaward, from W.N.W. to N. ....	●	62	7	1874
Garnish One fixed red light	47 14. 55 24.	White and red tower, S. side of Fortune Bay	...	20	..	1875
Bande de L'Arier One bright fixed light	47 24. 55 27.3	White tower on point of the beach at Bande de L'Arier or Belloram Harbour, Fortune Bay	8a	35	8	1874
Harbour Briton One fixed bright light	47 27.5 55 47.8	White tower, 14 ft. high, on Rocky Point, W. side of entr. Red ray shown over Harbour Rock .....	8a	68	9	1873
Burgeo Islands One fixed red light	47 36.2 57 35.2	Wooden tower, with keeper's dwelling attached, on Boar Id., E. end of Burgeo Isles	6a	160	17	1874
Rose Blanche Point One fixed bright light	47 35.8 58 41.5	Granite tower on eastern head of the point ...	4a	95	13	1874
Port Basque One fixed red light	47 33.8 59 7.2	On Channel Head .....	...	..	..	1875
CAPE RAY	47 37. 59 18.	White wooden building, 41 ft. high. Ellipses faint at long distances. Steam fog-whistle 1/4 mile E. of lt.-ho., 10 secs. every min. ....	●	..	20	1871
GULF OF ST. LAWRENCE.						
<b>ST. PAUL ISLAND</b>						
North-East Point One fixed bright lt.	47 13.8 60 8.3	White tower, 40 ft. high, on a rock; obscured from S. by W. 1/2 W. to W.S.W. Apr. 1 to Dec. 20	3a	144	20	1839
South-West Point One br. rev. lt., 1 m.	47 11.3 60 9.6	White tower, 40 feet high. Shown seaward, from N.N.W. to E., all the year round. A steam fog-whistle in Atlantic Cove .....	3b	140	20	1831
<b>MAGDALEN ISLANDS</b>						
<b>GREAT BIRD ROCK</b> One bright fixed lt.	47 50.7 61 8.3	White tower, 50 ft. high, on N.E. islet. April 1 to Dec. 31. Fog-gun every 30 minutes ...	2a	140	21	....
<b>GRINDSTONE ID.</b> One br. rev. lt., 1 1/2 m.	47 23.3 61 57.2	Tower near Etang du Nord, on W. side of Id., Magdalen Ids. Fog-wh. 8 secs. every 1/2 min. to be heard in calm weather 8 to 12 miles off	●	200	20	1874
<b>AMHERST ISLAND</b> One alternating lt.	47 13. 61 58.	White wooden building on South cape; bright and red lts., each for 30 secs. ....	●	..	20	1871
Entry Island One fixed red light	47 16.5 61 41.	White tower, 28 ft. high, on S.E. side of Id.	●	90	10	1874
<b>ANTICOSTI ISLAND</b>						
<b>HEATH POINT</b> One fixed bright lt.	49 5.3 61 41.8	Grey conical tower, 90 feet high, on point at S.E. end of island; must be kept open southward of Cormorant Point. Provision depot for shipwrecked people .....	●	110	15	1831
<b>SOUTH POINT</b> One br. flash. lt. 20 s.	49 4. 62 15.	White tower, 50 ft. high, on Bagot's Bluff, 1/2 mile from S. pt. Steam fog-whistle 10 secs. every minute .....	●	75	14	1871
<b>S.W. POINT</b> One rev. br. lt., 1 m.	49 23.7 63 35.8	Conical grey tower, 75 ft. high. Shown from S.S.E., seaward, to N.W. by W. ....	●	100	15	1831
<b>WEST POINT</b> One fixed bright lt.	49 52.5 64 32.	Round white tower, 100 ft. high, on extreme W. point. A gun fired every hour in fogs and snow storms. A depot for provisions...	2a	112	15	1858
CAPE BOZIER One fixed bright light	48 51.6 64 12.	White tower, 112 ft. high, on the cape. A gun fired every hour in fogs and snow storms ...	1a	136	16	1858
CAPE MAGDALEN One rev. red and br. lt.	49 15.7 65 19.5	White wooden tower, 54 ft. high; bright and red flashes alternately every 2 minutes .....	●	147	17	1871
<b>MARTIN RIVER</b> One fixed bright light	49 13.3 66 9.	White wooden tower, 54 ft. high .....	●	125	17	1876
<b>CAPE CHATTE</b> One rev. br. lt., 1 1/2 min.	49 5.9 66 45.5	Square white tower, 26 ft. high, on N.W. part of the cape .....	●	120	18	1871
<b>CAROUSEL ISLAND</b> One bright fixed light	50 5.7 66 22.7	White tower on one of the Seven Islands .....	●	200	20	1871
EGG ISLAND	49 38. 67 10.	Tower, 30 ft. high, 1 cable from S. end of the island .....	●	70	15	1871
POINT DE MONTS One fixed bright light	49 19.6 67 21.9	Round white tower, 75 ft. high, 1 1/4 mile N.E. of point. A gun fired every hour in fogs and snow. Provision depot for shipwrecks .....	●	100	15	1830

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>RIVER ST. LAWRENCE.</b>						
Matane	48 52. 67 33.	Square white wooden building, 28 ft. high ...	•	65   10	1873	
One fixed br. light						
Metis Point	48 41. 68 2.3	White tower, 40 feet high, on Metis Point	•	56   13	1874	
Br. & red rev. lt. 1 min.						
MANICOUGAN STRAIT LIGHTVessel	49 2.7 68 14.3	In 25 fathoms, at 1½ mile off southern edge of shoal. Lts. at unequal heights. Steam fog-whistle twice every 2½ minutes .....	a	27   8 24	1872	
Two fixed bright lights						
Father Point	48 31.4 68 27.3	Rimousky. White tower on the point. Pilots	..	43   10	1859	
One fixed bright light						
Port Neuf	48 38. 69 6.	Bright fixed light from square wooden building on pier .....	•	40   11	1873	
BICQUETTE ISLAND	48 25.3 68 53.3	Grey stone tower, 65 ft. high, on W. point. Gun every hour during fogs .....	..	112   15	1844	
One rev. br. lt., 2 min.						
RED ISLET BANK Lt.-V.	48 6.5 69 31.	Painted red; lies in 10 fathoms N.E. from Red Islet. Steam fog-whistle 10 secs. in ev. min.	•	40   11	1871	
Two bright fixed lights						
RED ISLET	48 4.3 69 32.9	Round stone tower, 51 ft. high, on centre of islet, on S.W. point of the bank .....	..	75   12	1848	
One fixed red light						
GREEN ISLAND	48 3.3 69 25.1	White tower, 40 ft. high, on N. point. A gun fired every ½ hour in fog and snow .....	..	60   13	1809	
One fixed bright light						
BRANDY POTS	47 52.5 69 0.6	Brick tower, 39 ft. high, at S.E. end of islet, on S.E. side of Hare Island. Pass to S. ...	4a	78   10	1862	
One bright fixed light						
Saguenay River	48 8. 69 39.	1. On the centre of Lark Islet .....	..	35   10	1872	
1. One fixed bright lt.		2. Lighthouses, 22 ft. high, on Pt. Noire, 608 yds. E. and W. from each other. To clear Prince Shoal, Bar Reef, and Vache Shoal ...	•	117   12	1875	
2. Br. fix. leading lts.			•	82   9	1875	
LONG PILGRIMS	47 43.2 69 43.	Brick tower, 39 ft. high, near centre of island	4a	180   12	1862	
One bright fixed light						
KAMOURASKA	47 38. 69 52.	Wooden tower, 39 ft. high, near N.E. end of Grande Ile. Light revolves every minute...	•	166   12	1862	
One bright revol. light						
Origneaux Point	47 29.7 70 1.8	Square white wooden tower, 20 ft. high, on end of St. Denis Pier .....	•	34   8	1875	
One fixed red light						
GOOSE CAPE	47 29.5 70 13.8	White tower, 42 ft. high .....	•	48   12	1876	
One fixed bright light						
St. Paul Bay	47 24.8 70 29.	White tower, 30 ft. high, on pier. N. shore of River St. Lawrence .....	•	36   10	1876	
One fixed bright light						
ST. ROCHE SHOALS						
Lower Lightvessel	47 22.2 70 14.9	Red; two masts and balls. In 3½ fathoms, on the N.E. part of the St. Roche Shoals, in the South Traverse. Fog-wh. 12 secs. in ev. m.	..	..	9   1836	
Two bright fixed lts.						
Upper Lightvessel	47 20. 70 16.	Two masts; lts. at unequal heights. In 3½ fms. on the N.W. edge of the shoal. Fog-bell ...	..	16   6 24	1871	
Two bright fixed lts.						
STONE PILLAR	47 12.4 70 21.6	White stone tower, 38 ft. high, 100 yds. from S. point of islet .....	..	68   12	1843	
One br. rev. lt., 1½ min.						
Algernon Rock	.....	Lighthouse building near stone pillar .....	..	..	..   1878	
Crane Island	47 3. 70 33.	Wood tower, 37 feet high, 1½ mile from West point of the island .....	•	44   10	1862	
One bright fixed light						
Cape Rouge	47 7.7 70 40.5	1. At Cape Rouge, to lead betw. Traverse Spit and Brûlé Bank .....	•	230   10	1875	
1. Two bright fix. lts.		2. Square white tower on Monté du Lac .....	•	170   ..	1875	
2. One fixed bright lt.			•	175   10	1870	
St. Francis, I. of Orleans	47 0.2 70 45.3	At E. end of island, to lead betw. W. Sands & Traverse Spit .....	•	110   10	1875	
Two fixed bright lts.			•	30   ..	1875	
St. John, I. of Orleans	46 55.2 70 53.5	White tower on wharf, at St. John .....	•	27   8	1874	
One br. rev. lt., ½ min.						
St. Lawrence Point	46 51.8 71 2.	White tower .....	•	38   8	1869	
One fixed bright light						
Belle Chasse	46 56. 71 2.	Wood tower, 30 ft. high, on E. end of island	•	76   10	1862	
One bright fixed light						
Quebec Harbour	.....	A wooden tower on Agate Island; guide to the harbour .....	..	32   10	1872	
One bright fixed light						

Note.—The Lights in the Gulf and River St. Lawrence are shown only during the navigable season, generally from April 1st to December 20th.

The Lights on the upper part of the River St. Lawrence, and those on the great American Lakes, are omitted, as not being of service to oversea vessels.

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W	Visible in Miles.	Year established
<b>NEW BRUNSWICK.</b>						
<b>CAPE GASPE</b> One fixed red light	48 45.2 64 9.2	Square white wooden building, 30 feet high. Steam fog-whistle near, 10 secs. every min.	•   360   12   1873			
<b>GASPE BAY</b>						
Sandy Beach Pt. Lt.-V. One br., 1 red fix. lt.	48 50.7 64 24.5	Painted red; off the end of the Sandy Beach Point, S. side of the entrance channel.....	..   34   ..   1871 ..   40   ..   1872			
O'Hara Point	.....	Red lt., only when mail steamers are expected	..   20   ..   ....			
Perce' Bay	48 30.5	Square white wooden tower, 20 feet high, on White Head. Fog-horn.....	•   138   13   1874			
One fixed white lt.	64 13.					
<b>CAPE DESPAIRE</b> One br. rev. lt. $\frac{1}{2}$ min.	48 25.7 64 18.3	Tower white, on the Cape, Chaleur Bay.....	•   90   15   1874			
<b>CHALEUR BAY</b>						
<b>MACQUEREAU POINT</b> Rev. red & br. lt. 2 m.	48 12.5 64 46.2	White tower, on the South point of entrance, Chaleur Bay Light red 1 min., bright 1 min.	•   56   12   1874			
Paspobiac Point	48 0.8	White tower, 40 ft. high, near extremity of point, on N. side of bay .....	•   55   13   1870			
One bright fixed lt.	65 14.3					
Bathurst Harbour	47 39.3	On Alston Point, 356 ft. apart; outer bright lt. and inner red lt. kept in line, lead in.....	..   27   9   1871 ..   31   9			
One br., 1 red fix. lt.	65 36.6					
Caraqueute Island	47 49.7	Tower, 48 ft. high, on W. end of island, S. side of bay .....	•   52   13   1870			
One bright fixed lt.	64 53.					
Carleton Point	48 15.2	White tower, 28 ft. high. One fixed red lt. ....	•   32   7   1872			
Heron Island	48 0.	White wooden tower, 20 ft. high, on E. side of Heron Island, Chaleur Bay.....	•   66   12   1875			
One fixed bright lt.	66 8.					
Dalhousie Harbour	48 3.7	Square white tower, 33 ft. high, on Bonami Point, S. side of entrance .....	•   49   13.   1871			
One bright fixed lt.	66 20.8					
<b>MISCOU ISLAND</b>	48 1.	1. White tower, 74 ft. high, on Birch Point, N. pt. of Id. Fog-whistle 5 secs. ev. 1 min. 2. Tower, 28 ft. high, at Goose Lake, W. side of island.....	..   79   12   1856 •   40   10   1875			
1. One fixed red light	64 29.4					
2. Rev. br. lt. ev. min.						
Shippagan	47 43.	A white wooden building, 20 ft. high, on the point of the sand bar, E. side of the entrance to the gully .....	..   32   10   1873			
One bright fixed light	64 39.5					
Poemouche Gully	47 40.	Square white wooden tower, 37 ft. high.....	•   35   8   ....			
One fixed green light	64 46.					
Tracadie North Gully	47 33.3	On N. side of Gully. In line, lead in .....	•   39   12   1872			
Two bright fixed lts.	64 51.4					
Tracadie South Gully	47 30.2	Upper lt.-ho. red, lower white. On N. side of Tracadie S. Gully. N. and S., 170 yds. apart. In line, mark channel into harbour .....	..   26   8   1873 ..   19   ..   ....			
Two bright fixed lts.	64 52.					
<b>MIRAMICHI BAY</b>						
Tabisintac Gully	.....	Red and bright lts. on Crab Island in line lead into Gully.....				
Negowac Gully		Two br. fix. lts. in line show entrance .....	•   30   7   1873 •   35   10   1873			
<b>ESCUMENAC POINT</b>	47 4.5	White tower, 58 ft. high, on point at S.E. side of bay. Steam fog-whistle 10 secs. ev. min.	3a   70   14   1841			
One fixed bright lt.	64 47.6					
Preston's Beach	47 4.8	White towers, 30 and 28 feet high, at Ship Channel entrance .....	•   66   10   1870 55   10			
Two bright fixed lts.	64 55.					
<b>FOX ISLAND</b>	47 8.8	1. On N.W. point of island; in one, show direction of Horse-shoe Channel .....	..   50   10			
1. Two fix. br. lts.	65 2.	2. Leading lts. for Swashway Channel, E. and W., $\frac{1}{2}$ mile apart.....	•   32   10   1872			
2. Two fix. br. lts.						
Portage Island	47 9.8	White tower, 42 ft. high, on S. end of the island .....	•   46   12   1870			
One bright fixed lt.	65 2.7					
Inner Horseshoe Bar	47 8.	Schooner rigged; lies between Fox and Portage Islands .....	•   35   8   1873			
Lightvessel	65 3.					
One fixed red light						
<b>Oak Point</b>	47 8.	White tower, 36 ft. high. In one, West, lead through the Narrows .....	•   60   10   1870 40			
Two bright fixed lts.	65 15.					
<b>Bartiboque</b>	47 5.	At Lower Newcastle. Bear N.E. and S.W. from each other .....	•   140   10   1870 120   10			
Two bright fixed lts.	65 23.					
<b>Middle Island</b>	47 3.5	Bright fixed light on N. side of island .....	•   45   7   1874			
<b>Sheldrake Island</b>	.....	Or white beacons, 500 yds. apart, on S. side of island .....	•   48   9   1873			
Two bright fixed lts.						
<b>Huckleberry</b>	.....	N.W. beacon, a conspicuous white structure; S.E. beacon, on the E. side of a white barn. In line, lead across the outer bar .....	..   ..   ..   1871			
Two bright fixed lts.						
<b>Malcolm River</b>	.....	Fix. lts. on each of the beacons W. of Malcolm P.	..   ..   ..   1871			

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>RICHIBUCTO HEAD</b>	46 39.7	Fix. br. lt. from white tower, 50 ft. high .....	4a	70	14	1864
Shediac Bay	46 19.2	Bright rev. lt., $\frac{1}{2}$ min., on Cassies Point.....	..	40	14	1872
Shediac Harbour	46 14.7	Approaching, keep two leading lts. on Shediac	..	..	..	....
	64 31.8	Id. in line. Small br. lt. on Duchene Wharf	..	..	..	....
<b>Jourimain Island</b>	46 10.	White tower, 40 ft. high, on island in Northumber-	..	72	14	1870
One br. flash. lt., 10 s.	63 50.	land Strait .....	..	..	..	....
<b>Pugwash Harbour</b>	45 52.5	Square white tower, 44 ft. high, on Seaman's	●	48	8	1871
One fixed br. or red lt.	63 40.5	or Fishery Point, E. side of entrance; red	..	..	..	....
seaward, bright toward the harbour .....		..	..	..	..	....
<b>Wallace Harbour</b>	45 49.8	White building, 25 ft. high, on Mullin Point	●	39	11	1873
One bright fixed light	63 24.3	N. side of entrance .....	..	..	..	....
<b>Amet Island</b>	45 50.2	White square tower on island in Tatmagouche	●	44	12	1857
One bright fixed light	63 10.	Bay entrance .....	..	..	..	....
<b>Caribou Island</b>	45 44.	On N.E. end of island in Northumberland	..	35	10	1868
One rev. br. lt., 1 min.	62 46.	Strait .....	..	..	..	....
<b>Pictou Harbour</b>	45 41.4	Tower, 55 ft. high, striped red and white ver-	●	65	11	1834
One bright, one red lt.	62 39.5	tically, on S. point of entrance. Lights ver-	..	40	10	1868
		tical. Lower lt. red .....	..	..	..	....
<b>PICTOU ISLAND</b>	45 49.2	White tower, on E. point .....	..	52	12	1853
One fixed bright light	62 30.5	..	..	..	..	....
<b>CAPE GEORGE</b>	45 52.6	Square white tower, 39 ft. high, on N.E. extr.	2b	400	25	1861
One rev. br. lt., $\frac{1}{2}$ min.	61 54.7	o. Nova Scotia. Obscured W. of N.W. ....	..	..	..	....
<b>Pomquet Island</b>	45 39.7	On N.E. point of island, near Antig.-mish, in	●	50	10	1868
One fixed red light	61 44.5	St. George's Bay. Obscured to West .....	..	..	..	....
<b>PRINCE EDWARD ISLAND.</b>						
<b>WEST POINT</b>	46 37.5	Red and white banded tower, 67 ft. high; lt.	●	66	13	1876
One rev. lt., 1 $\frac{1}{2}$ min.	64 23.2	shows 3 white and 1 red flash, each flash at-	..	..	..	....
		taining its greatest brilliancy every 22 $\frac{1}{2}$ secs.	..	..	..	....
<b>Bedeque Harbour</b>	.....	A bright lantern lt. on Green's Wharf .....	..	15	7	1856
<b>Sea Cow Head</b>	46 19.	Tower, on Salutation or Sea Cow Head, S.E.	..	80	14	1865
One fixed light	63 48.5	side of entrance to Bedeque Bay .....	..	..	..	....
<b>Charlottetown</b>	46 11.6	On W. side of entr., vertical, 21 ft. apart; upper	●	56	12	1851
One br., one red fix. lt.	63 7.5	br., lower red lt. Lower lt. only visible in	●	35	3	1876
		direction of bell-buoy .....	..	..	..	....
<b>HILLSBORO' BAY</b>	46 3.2	White brick tower, 50 ft. high, on Prim Point,	●	68	13	1845
One fixed bright light	63 2.1	S.E. of bay .....	..	..	..	....
<b>SOUTH POINT</b>	62 44.5	Br. lt. from tower, 40 ft. high, on Wood Id....	4a	80	15	1876
<b>Little Sands</b>	62 39.	Red lt., from window of house, 20 ft. high ...	●	50	5	1877
<b>Murray Harbour</b>	.....	Two fixed lights, 1 mile apart .....	..	..	5	....
<b>CARDIGAN BAY</b>	46 8.8	White tower, 49 ft. high, on Pannoure Head,	●	89	14	1868
One fixed bright light	62 27.7	S. entrance of Georgetown Harbour. Kept	..	..	..	....
		open of Terrace Pt., clears Reef off Bear Cape	..	..	..	....
<b>Georgetown</b>	46 9.9	Square white tower, on St. Andrew Point,	●	36	8	1868
One bright fixed light	62 31.4	B. W. side of entrance .....	..	..	..	....
<b>EAST POINT</b>	46 27.1	Octagonal white tower, 60 ft. high, on S. side	●	130	18	1867
One br. rev. lt. ev. 3 m.	61 58.2	E. point .....	..	..	..	....
<b>St. Peter's Harbour</b>	.....	Two fixed lights .....	..	..	6	1868
<b>Tracadie Harbour</b>	.....	Two fixed red lights in line S.W. by S. ....	●	40	..	....
<b>Little Rustico</b>	.....	Two leading lights on W. side of entrance .....	..	..	..	....
<b>Grand Rustico</b>	.....	Upper lt. br., lower red, vertical, 5 yds. apart;	..	..	..	....
		seen only in channel ... .....	..	..	..	....
<b>Grenville Harbour</b>	.....	Upper red, lower br. lt.; seen only in channel	..	..	..	....
<b>Richmond Bay</b>	46 34.7	On Bill Hook, or Fishery Id., N. side of entr.,	●	50	12	1866
Two fixed bright lights	63 42.5	E. by S. and W. by N., 400 yards apart .....	..	18	6	....
<b>Cascumpeque</b>	46 48.4	White towers on S.W. pt. of Sandy Id., N. side	●	45	12	1866
Two fixed lights	64 2.3	of entr. Main lt. br., range lt. red, E. by S.	..	18	6	1876
		and W. by N., 217 yds. apart .....	..	..	..	....

Note.—The lighthouses of Nova Scotia and New Brunswick, where necessary, are painted with black or red stripes, &c., to distinguish the towers from the land; as, after the snow is gone off the land, the accumulations against the fence, which generally run at right angles to the coast, and which continue for some time after it has disappeared from the fields themselves, have exactly the appearance of a white tower, and frequently mislead even those acquainted with the coast.

*Lighthouses.*

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Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Tignish River	46 57.5	High lt. from mast on S. side of harbour entr., low lt. on end of N. breakwater, 1,035 ft. E. of high lt. In line lead up to harbour .....	●   26   6   1877			
Two fixed bright lts.	63 59.3		●   17   6			
<b>NORTH POINT</b>	47 3.8	On the low N. extreme of island. A reef extends nearly 2 miles to northward .....	..   80   12   1866			
One br. rev. lt. ev. min.	63 59.3					1875
<b>CANSO GUT</b>						
North Entrance	45 41.7	White tower, 35 ft. high, on W. side, 120 yds. in-shore.....	●   110   18   1842			
One fixed bright lt.	61 28.9					
<b>Ship Harbour</b>	45 36.7	White tower, 24 ft. high, on Stapleton Point, S. side of the harbour .....	●   44   7   1870			
One red fixed light	61 22.					
<b>South Entrance</b>	45 31.5	Tower white, with black diamond, on Eddy Point. Lights horizontal, 8 yards apart.....	●   25   8   1851			
Two fixed bright lts.	61 14.6					
<b>CAPE BRETON ISLAND.</b>						
<b>Port Hood</b>	46 0.	White tower, S. entrance. Light red to N., and bright to S. ....	●   54   10   1854			
One fixed br. or red lt.	61 31.6					
<b>Sea Wolf or Margaree Id.</b>	46 21.5	White tower on summit, or middle of Id. On near approach, light is obscured by cliffs ...	●   298   21   1854			
One fixed bright light	61 15.5					
<b>CHETICAN ISLAND</b>	46 36.5	White building, 24 ft. high, with black ball, on S.W. end of island .....	●   149   20   1872			
One br. rev. lt., $\frac{1}{4}$ min.	61 3.					
<b>MONEY POINT</b>	47 2.2	White wooden tower, 36 ft. high. Lt. shows alternately red and bright every 45 secs. ...	●   74   14   1875			
Revolving light	60 23.5					
<b>INGANISH ISLAND</b>	46 41.3	White wooden tower, 40 ft. high, on island ...	6a   237   15   1871			
One bright fixed light	60 20.0					
<b>St. Anne's Harbour</b>	46 17.5	White tower, 30 feet high, on the N. side of Beach Point, at entrance.....	●   24   8   1871			
One bright fixed light	60 32.2					
<b>CIBOUX ISLAND</b>	46 23.2	On Bird Island, $\frac{1}{2}$ mile from N. end.....	●   77   14   1864			
One rev. red lt., 1 min.	60 22.5					1875
<b>Black Rock Point</b>	46 19.	Square white tower, 28 ft. high, on S. side of entrance to Big Bras d'Or .....	●   45   10   1868			
One bright fixed light	60 24.					
<b>Anconi Point</b>	46 19.5	Square white wooden tower, 20 ft. high, or N. side of entrance to Little Bras d'Or Lake	●   91   11   1874			
One fixed red light	60 17.2					
<b>SYDNEY</b>	46 16.2	1. Tower, 51 ft. high, red and white, vertical, on Flat Point, E. side of Spanish Bay..... 2. White building, 20 ft. high, on W. end of S.E. bar of the harbour .....	●   70   14   1832 ●   30   9   1872			
1. One fixed bright lt.	60 7.3					
2. One fixed red light						
<b>Bridgeport Harbour</b>	46 14.2	On Lingan Head, N. side of entrance to Bridgeport Harb. Square white tower, 20 ft. high	●   50   10   1874			
One fixed red light	60 2.3					
<b>FLINT ISLAND</b>	46 11.	White tower, 43 ft. high. Flash every 15 secs.	●   65   12   1856			
One bright rev. light	59 45.8					
<b>SCATARI ISLAND</b>	46 2.2	White tower, 70 feet high, on Trap Rock, at N.E. point. Bright, 1 min.; dark, $\frac{1}{2}$ min. Should not be approached within 2 miles ...	●   90   15   1836			
One rev. bright light	59 40.3					
<b>Menadou</b>	46 0.5	White tower, 40 ft. high, at W. end of Scatari Island.....	●   90   9   187			
One fixed red light	59 47.5					
<b>LOUISBURG</b>	45 54.6	Tower, 35 ft. high, white with black vertical stripes, on N. side of entrance.....	●   85   16   1842			
One fixed bright light	59 57.2					
<b>GUYON ISLAND</b>	45 46.2	Tower, black stripe on white, 54 ft. high, 280 yards within West extreme of island .....	●   74   12   1877			
One rev. red lt. ev. $\frac{1}{4}$ m.	60 6.3					
<b>Oquette Island</b>	45 36.7	In Lennox Passage, from square white wooden tower on S. point of island .....	●   78   9   1874			
One fixed red light	60 57.3					
<b>CAPE BOUND</b>	45 34.7	Square white wooden tower, 28 ft. high, at E. end of Madame Island .....	●   92   14   1874			
One fixed white light	60 53.					
<b>Green Island</b>	45 28.8	White tower, 31 ft. high, on island near S.E. end of Madame Island. Lt. red and br. for $\frac{1}{2}$ min alternately .....	..   70   14   1865			
One revolving light	60 53.7					
<b>Petitdegrat Inlet</b>	45 29.4	Wooden lighthouse, white, 31 ft. high, on Big Arrow Islet, East point of entrance to inlet...	●   38   10   1877			
One fixed red light	60 57.8					

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Arichat Harbour</b> One fixed bright light	45 29. 61 1.9	White tower, S. entrance; on Murache Point, Madame Island .....	..	24	8	1851
<b>West Arichat Harbour</b> One fixed <i>red</i> light	45 30.3 61 3.1	White building, 28 ft. high, on N. end of Jerseyman Island. Guide through Crid Passage	●	39	9	1872
<b>Greighton Island</b> One rev. lt. ev. 40 secs.	45 30.7 61 6.	At S.W. side of Madame Island; square white wooden tower, 20 ft. high .....	●	..	10	1874
<b>Ganso Harbour</b> One fixed <i>red</i> light	45 21. 60 58.5	White building, 28 ft. high, on N.E. part of Hart Island .....	●	42	9	1872
NOVA SCOTIA.						
<b>SABLE ID., East End</b> One fixed bright light	43 58.5 59 46.	Octagonal tower, 36 ft. high, painted alternately white and brown, $\frac{1}{4}$ mile from E. end of Id.	2a	128	17	1873
<b>West End</b> One bright rev. lt.	43 57. 60 8.	Octagonal white tower, 98 ft. high, 17 miles from that on E. end. Shows 3 br. flashes at $\frac{1}{4}$ min. intervals, then eclipsed for $\frac{1}{4}$ min. Steam fog-whistle discontinued (1878). ....	●	123	17	1874
<b>Guysboro Harbour</b> One bright fixed light	45 22.8 61 29.2	White tower, 20 feet high, on West side of entrance, near Peart Point .....	●	30	8	1846
<b>CAPE SABLE</b> Two fixed bright lights	45 19.8 60 55.5	In one tower, 60 ft. high, striped red and white horizontally, on the N. part of Cranberry Island. Lit. vertical, 12 yds. apart. A steam fog-whistle for 8 secs. in every min. ....	●	75 40	15 9	1815
<b>WHITE HEAD ISLAND</b> One br. rev. lt., 20 secs.	45 12. 61 8.	White tower, 35 feet high, on S.W. extremity	●	55	11	1853
<b>Berry Head</b> One fix. <i>red</i> and br. lt.	45 11.7 61 18.7	Red and white striped tower, 36 ft. high, on W. side of entrance to Tor Bay; lt. red seaward, bright to northward .....	●	51	10	1876
<b>Green Island</b> One bright fixed light	45 6. 61 32.5	Square white building, 28 ft. high, on S. point. Guide to Country and Fisherman Harbours	●	51	12	1873
<b>Isaac Harbour</b> Two fixed bright lts.	45 10.3 61 39.	Shown on Holly Point, 20 ft. apart, W. side of entrance to harbour .....	..	..	..	1877
<b>Liscomb Harbour</b> One revolving lt., 2 m.	44 59.3 61 57.8	On W. side of Liscomb Island, E. side of entr. Flashes alternately red and bright .....	●	64	12	1872
<b>BEAVER ISLANDS</b> One rev. br. lt., 2 min.	44 49.6 62 20.2	Tower, 35 ft. high, white, with 2 black balls, on S.E. pt. of E. Beaver, or William Island	●	70	12	1846
<b>Pope Harbour</b> One fixed <i>red</i> light	44 47.7 62 38.8	White wooden tower, 37 ft. high, on W. point of Harbour Island .....	●	45	9	1877
<b>EGG ISLAND</b> One revolving lt., 1 m.	44 39.8 62 51.5	Tower, 45 ft. bl. & wh. str. Flashes red & br. alternately. Dangerous reefs around it.....	●	85	15	1865
HALIFAX						
<b>Devil Island</b> Two fix. leading lts.	.....	E. and high lt.-ho., 53 ft. high, E. $\frac{1}{2}$ N., 175 yds. from low lt.-ho. High lt. E. by N., open S. of low lt., leads S. of Thrum Cap Shoal Pilots	●	59	13	1852
<b>Sherbrook Tower</b> One fixed bright lt.	44 36.1 63 31.9	On Mauger Beach, E. side of entrance. Circular tower, 48 ft. high, white, with red roof. Fog-bell 7 times every minute.....	●	58	10	1815
<b>George Island</b> Two fixed bright lts.	.....	Tower, drab, 21 ft. high, on W. side of Id.: its. 20 ft. apart, vertically; open W. of Maugher Beach lt., N. $\frac{1}{4}$ W., leads W. of Thrum Cap Shoal. Two lights are also shown on Citadel Hill flagstaff, elevated 240 ft. ....	●	..	12	1876
<b>Chebucto Head</b> One br. rev. lt. 1 m.	44 30.3 63 30.8	White building on the head, W. side of entr. to harb. Whistle-buoy, 13 m. N.E. $\frac{1}{2}$ E. of head, and another S.E. $\frac{1}{2}$ S. $\frac{1}{2}$ miles from head ...	●	132	15	1872
<b>SAMBRO ISLAND</b> One fixed bright light	44 26.2 63 33.7	White tower, 60 ft. high, on middle of island. Fog Horn sounded 10 secs. in every minute	●	115	20	1758
<b>BETTY ISLAND</b> One rev. <i>red</i> lt., 2 min.	44 26.3 63 45.8	White tower, with two red bands.....	●	75	14	1875
<b>St. Margaret's Bay</b> One fixed <i>red</i> light	44 29. 63 57.	White tower, 26 ft. high, on Peggy's Point, E. side of entrance .....	●	65	10	1868
MAHONE BAY						
<b>Green Island</b> One revolving light	44 23. 64 2.7	Square white wooden tower, 28 ft. high. Lt. shows br. & red flashes alternately ev. $\frac{1}{4}$ m.	●	59	13	1878
<b>EAST IRONBOUND I.</b> One fixed bright lt.	44 26.2 64 4.5	New white tower, 46 ft. high, on S.E. part of island, at entrance of Mahone Bay .....	a	150	16	1867 1871
<b>Hobson's Nose</b> One fixed <i>red</i> light	44 24.9 64 13.8	White tower, 29 ft. high .....	●	68	11	1872

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>MALAGUASH or LUNEN-</b> <b>BURG BAY</b>	44 20. 64 7.	Lts. in one red tower, 52 ft. high, on E. pt. of Cross Island. Upper light bright, 45 secs.; dark, 15 secs. .... Lower fix. lt. Pilotstation. A refuge harbour	●   90   14   1832 ●   56   8			
One revolving lt., 1 m. One fixed bright light						
<b>Battery Point</b>	44 21.7 64 17.6	On the top of a white dwelling house.....	●   50   10   1864			
One bright fixed lt.						
<b>W. IRONBOUND ID.</b>	44 13.7 64 16.3	White tower, 29 feet high, on S. side of West Ironbound Island .....	●   70   13   1855			
One revolving lt., $\frac{1}{2}$ m.						
<b>Le Have River</b>	44 17.3 64 21.	White wooden tower, 35 ft. high, on Fort Point, West side of entrance to river .....	●   48   8   1877			
One fixed red light						
<b>Mosher Island</b>	44 14. 64 18.7	White tower, 26 ft. high, on S.E. end of island, on W. side of entrance to Le Have River .....	●   55   10   1868			
One fixed red light						
<b>Metway Head</b>	44 5.7 64 32.2	Tower, 23 ft. high, white, with black square, on W. side of entrance.....	●   44   10   1851			
One fixed bright light						
<b>LIVERPOOL BAY</b>						
<b>Coffin Island</b>	44 2. 64 37.6	Tower, 50 ft. high, red and white bands, on S. point of the island .....	●   80   16   1812			
One rev. br. lt., 2 m.						
<b>Fort Point</b>	44 3.7 64 39.	Square white building, to be left on the port hand in entering.....	●   30   5   1855			
One fixed red light						
<b>LITTLE HOPE ISLET</b>	43 48.5 64 47.2	Square white tower, 26 ft. high, on middle of island, to S.E. of the entrance of Port Jolis .....	●   40   10   1865			
One rev. red lt., 1 min.						
<b>Port Mouton</b>	43 55. 64 48.	White building, 20 ft. high, on N. point of Spectacle Island.....	..   47   10   1873			
One fixed red light						
<b>Port L'Hebert</b>	43 48.7 64 55.4	White tower, 29 ft. high, at Shingle Beach, E. side of Port L'Hebert.....	●   33   9   1872			
One fixed red light						
<b>RUGGED ISLAND HARB.</b>	43 39.2 65 5.1	1. White tower, 89 ft. high, on the Gull Rock, $\frac{1}{4}$ miles S. of harbour entrance .....	●   51   10   1853			
1. One fixed red lt.		2. White tower, 29 ft. high, on Carter Island .....	●   66   9   1872			
2. One fixed red light						
<b>CAPE ROSEWAY</b>	43 37.2 65 15.7	Vertical, in one tower, 77 feet high, striped black and white vertically; on S.E. point of Mc Nutt's Island, S. of Shelburne .....	●   120   18   1788			
Two fixed bright lights		White tower, 20 feet high, on N.E. side of island. Alternate red and bright flashes .....	..   65   10   1858			
<b>Negro Island</b>	43 30.9 65 21.	White tower, 20 ft. high, on Sand Point, E. side of harbour .....	●   48   12   1872			
One revolving lt., 1 m.						
<b>Shelburne Harbour</b>	43 41.2 65 19.	Tower, 35 ft. high, white, with black ball, on Baccaro Point, W. side of entrance.....	●   49   12   1850			
One fixed red light						
<b>Port Latour</b>	43 26.9 65 28.2	Moored in fms., $\frac{1}{4}$ miles N.N.W. $\frac{1}{2}$ W. from Baccaro Pt. It. ho. Vessel painted red .....	●   30   7   1875			
One fixed red light						
<b>Barrington Bay Lt.-ves.</b>	43 31.1 65 34.4	White tower, 50 ft. high, on S. pt. of islet, S. of Cape Sable Id. It. vis. 15 secs., eclipsed 25 secs. Steam Fog-whistle 10 secs ev. min.	●   53   12   1861			
One fixed bright light						
<b>CAPE SABLE</b>	43 23.3 65 37.2	One fixed red lt., on N.W. pt. of Stoddart Id. ....	●   22   9   1877			
One br. rev. lt., $\frac{1}{2}$ min.		Square white wooden tower, 28 ft. high, on S. point of island .....	●   46   12   1874			
<b>Shag Harbour</b>	43 28.4	One fixed red lt. on Beach Point, S.E. side of entr. ....	●   28   8   1874			
<b>Bon Portage Island</b>	43 27.2 65 44.7	White tower, 28 ft. high, on S. point of island, to guide vessels into Argyle Harbour .....	●   115   10   1874			
One rev. red lt. 1 min.						
<b>Pubnico Harbour</b>	43 35.7	Horizontally, 24 ft. apart, on each end of a house, on S.W. pt. of Big Fish Id., at entr. ....	●   ..   12   1864			
<b>White Head Island</b>	43 39.7 65 52.					
One fixed red light						
<b>Tusket River</b>	43 42.1 65 57.2					
Two bright fixed lights						
<b>BAY OF FUNDY.</b>						
<b>SEAL ISLAND</b>	43 23.6 66 0.9	White tower, 60 ft. high, $\frac{1}{2}$ of a mile inland of South point. Powerful steam fog-whistle. Blonde Rock lies $\frac{3}{4}$ miles to S. by W. ....	●   98   18   1830			
One fixed bright light						
<b>CAPE FOURCHU</b>	43 47.5 66 9.8	Tower, 59 ft. high, striped red and white vertically, on S. point of E. cape. Fog-whistle	●   117   20   1839			
One rev. br. lt., $1\frac{1}{2}$ m.						
<b>Yarmouth Harbour</b>	43 48.5 66 8.7	On a beacon, on reef extending from S.W. point of Bunker Id., E. side of entrance. Shown to S. from S.W. by S. to S. $\frac{1}{2}$ W., and to N.W. from N. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ W. ....	●   27   8   1874			
One fixed red light						
<b>CAPE ST. MARY</b>	44 5. 66 10.5	White building, 46 feet high, on East side of entrance to St. Mary's Bay.....	●   100   12   1866			
Altern. red & br. lt. 30 s.						
<b>Meteghan River</b>	44 13.2 66 8.7	On end of breakwater. It.-ho. painted in red stripes on seaward side; to be left close to starboard in entering.....	..   21   6   1875			
One fixed green light						

Name and Character of Light.	Lat. N. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles,	Year established.
<b>Church Point</b> One fixed red light	44 20. 66 7.5	White tower on point, on E. side of St. Mary Bay.....	•   36   8   1874			
<b>Sissibou River</b> One bright fixed light	44 26.5 66 1.3	White tower, 33 ft. high, on S. side of entrance to river, E. side of St. Mary's Bay .....	•   36   8   1871			
<b>BYER ISLAND</b> One fixed bright light	44 14.9 66 23.5	White tower, 55 ft. high, on W. point. S.W. Ledge lies 4 miles to S.S.W. from the light. Steam fog-whistle, 3 blasts every minute ...	•   66   15   1809 •   45   15   1832			
<b>Peter Island</b> Two fixed bright lights	44 15.5 66 20.9	On white house, at South entrance to Grand Passage. Lights horizontal, 8 yds. apart. Shown through the passage to S.N.E., and southward from S.W. by W. to S.S.E. & E.	•   40   10   1850			
<b>Petit Passage</b> One revolving lt., 1 m.	44 24.3 66 13.	Light white and red alternately; on house on Boar's Head, S. side of N. entrance. Shown from E. by S. to S.W. by W.....	•   ...   ...   1864			
<b>DIGBY, or ANNAPOLIS</b> One fixed light	44 40.8 66 47.3	Tower, 22 ft. high, striped vertically, on Point Prim, S. pt. of entrance to Annapolis Basin. Powerful steam fog-whistle 8 secs. ev. min.	•   76   13   1817			
<b>Marshall Cove</b> One fix. br., one green lt.	44 56.9 65 16.	Vertically, on end of pier at Fort Williams, 21 ft. apart. Upper bright lt., lower green lt. Shown northward, from W.S.W. to E.N.E.	•   60   10   1859 •   57   5			
<b>Margarettville</b> Two fixed red lights	45 2.9 65 4.	Square building, black and white bands. Lts. vertical .....	•   30   8   1859 •   27			
<b>BLACK ROCK POINT</b> One fixed bright light	45 10.2 64 46.	White tower, 35 ft. high. A steam fog-whistle is sounded from Cape D'Or, 7 m. to northwd.	•   45   12   1848			
<b>Horton</b> One fixed bright light	45 6.3 64 13.2	White tower, 20 ft. high, on the bluff; on W. side of entrance of River Avon .....	•   92   20   1851			
<b>Walton Harbour</b> One fixed red light	45 14. 64 0.8	White building, 20 feet high, on N. side of entrance .....	•   60   10   1873			
<b>Burn Coat Head</b> One bright fixed light	45 18.3 63 48.5	Square white tower, 50 ft. high, on S. side of entrance to Cobeguid Bay, Basin of Mines...	•   75   13   1859			
<b>Spencer Point</b> One bright fixed light	45 23.5 63 36.	On the N. side of Cobeguid Bay. (Doubtful)	•   35   6   1863			
<b>Parrsborough</b> One fixed bright light	45 23. 64 19.	Whits tower, 32 ft. high, on Partridge Island, W. side of river .....	•   37   9   1852			
<b>Apple River</b> One fixed bright light	45 28.3 64 51.5	White house, on Cape Capstan, or Hetty Point	•   64   10   1848			
<b>Crindstone Island</b> One fixed bright light	45 43.2 64 37.4	White tower, on W. part of Id., in Chignecto Channel. Fog-trumpet, 4 blasts every min.	•   60   12   1859			
<b>Hillsborough</b>	45 55.3 64 37.8	Beacon lt. from tower, 23 ft. high, on wharf, Petit Couadiac River .....	•   14   5   1878			
<b>CAPE ENRAGE</b> One fixed bright light	45 35.6 64 46.9	Square white tower, 23 ft. high, on the pitch of the cape. Shown from N.W. to N.E. Steam Fog-whistle 8 secs. every minute .....	•   121   15   1840			
<b>QUACO</b> One rev. br. lt., 20 secs.	45 19.3 65 31.9	Tower, 46 ft. high, red and white horizontal bands, on rock off the head. Fog-bell ev. 12 s.	•   58   15   1835			
<b>CAPE SPENCER</b> One revolving lt., 1 1/2 m.	45 12.1 65 55.	Square white building, 35 ft. high. Flashes alternately red and white .....	•   207   20   1873 •   10			
<b>ST. JOHN HARBOUR</b>						
<b>Partridge Island</b> One fixed bright lt.	45 14.1 66 3.1	Tower, 40 ft. high, striped vertically red and white. Steam-whistle, 10 secs. in ev. min. Bell buoy near E. side of Partridge Rock	•   119   20   1791 •   1832			
<b>Negro Point</b> One fixed red light	45 14.3 66 3.3	White lt.-ho., 35 ft. high, 50 ft. within extr. of breakwater running out 720 yds. S.S.E. from Negro Point .....	•   36   8   1878			
<b>Beacon Tower</b> One fixed bright lt.	45 15.1 66 3.1	Stripped vertically, white and black, on South extreme of spit, W. side of harbour .....	4a   35   10   1823			
<b>POINT LEPREAU</b> Two fixed bright lights	45 3.5 66 27.6	Tower, 31 ft., red & white bands; lts. vertical, 28 ft. apart. Shown from W.N.W., southwd., to E. by N. Fog-whistle, 2 bl. once ev. min.	•   81   15   1831 •   5			
<b>Beaver Harbour</b> One fixed bright light	45 3.7 66 44.0	White tower, 36 ft. high, on Drew Point, W. side of harb.; lts. vis. to southward betw. heads of harb. Good anchorage E. by N. from it...	•   45   10   1878			
<b>SOUTH WOLF ISLAND</b> One br. rev. lt., 1 1/2 min.	44 56.5 66 44.2	White lighthouse, 35 ft. high, on S.E. point of island.....	•   111   18   1872			
<b>L'Etagne Harbour</b> 1. One fixed green lt. 2. One fixed red light	45 2.3 66 48.7	1. White lt.-ho., 31 ft. high, on W. extr. of Pea Island, E. side of entrance to harbour... 2. White tower, 30 ft. high, on W. pt. of Bliss Island, in the entrance of the harbour.....	•   51   10   1878 •   45   10   1872			
<b>CAMPOBELLO ISLAND</b> One fixed bright light	44 57.7 66 53.9	Tower, 34 ft. high, white, with red cross, on N. point of Head Harbour .....	•   64   15   1829			

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Passamaquoddy Bay</b> One fixed bright light	45 7. 66 54.5	White wooden tower, 29 ft. high, on Mijic Bluff, at entrance of Magaguadavic River. Shoal extends 250 yds. E.N.E. of it.-house	●   130   15   1876			
<b>Port St. Andrew</b> 1. One fixed br. lt. 2. One fixed br. lt.	45 4.2 67 4.	1. White tower, 22 ft. high, on N. pt. of entr. 2. White-frame tower on Tongue Shoal, 1½ m. S.E. by E. from Port St. Andrew light .....	●   35   10   1833 ..   40   10   1876			
<b>St. Croix River</b> Two fixed bright lts.	45 10. 67 10.	On Spruce Point and St. Mark Point, N. side of river. Brown towers, 28 ft. high .....	●   32   ..   1876 ●   32   ..   1876			
<b>GREAT MANAN ISLAND</b> One fixed bright light	44 45.9 66 44.1	White tower, 50 ft. high, on N.E. point of Id. Shows eastward, from S.W. to N.W. Stea fog-whistle, 3 blasts ev. min., on N.W. point of island .....	●   148   17   1861			
<b>MACHIAS ISLANDS</b> Two fixed bright lights	44 30.1 67 6.2	White towers, on Mast Id. Lts. in one, N.W., clears Murr Ledges 4 miles to southward. Steam fog-whistle, 1 blast every ½ minute...	3a   66   10   1878 3a   58   ..   1832			
<b>GANNET ROCK</b> One fix. & flash. lt., 1 m.	44 30.6 66 47.	Tower, 41 feet high, striped black and white, vertically; fix., with flashes of 5 & 45 secs. ev. min. A gun in answer to signals during a fog. Reefs extend 4 miles to eastward ...	4e   66   12   1831 4e   66   12   1867			

## UNITED STATES.

## MAINE.

<b>WEST QUODDY HEAD</b> One fixed bright light	44 48.9 66 56.	Tower, 55 ft., red & white bands, near Eastport, S. side of entr. Shown from N. 63° W. to S. 57° W. A Fog-whistle, 8 secs. ev. min.	3a   133   17   1808			
<b>Little River</b> One fixed & flashing lt.	44 39.8 67 12.1	White tower, 28 ft. high, on island, at entrance. Flash every ½ min. Shown from N. 63° E. to S. A Fog-bell twice in a minute .....	5d   40   12   1855			
<b>Machias Bay</b> One fixed red light	44 39. 67 21.	White to r., 38 ft. high, on S. end of Avery Rock. Fog-bell .....	●   59   10   1875			
<b>Libby Island</b> One fixed bright light	44 34.1 67 22.	Grey tower, 35 ft. high, on island, entrance to Machias Bay. Fog-bell .....	4a   52   13   1822			
<b>MOOSE PEAK</b> One rev. br. lt., 30 secs.	44 28.5 67 31.9	White tower, 40 ft. high, on Mistake Island, S. of Moose Peak, or Moose-a-bee Island. Whistle-buoy S. by E. 2 miles from it.-ho...	2b   65   14   1826			
<b>Nash's Island</b> One fixed red light	44 27.8 67 44.8	White tower, 28 ft. high, on E. side of Pleasant River .....	4d   47   12   1858			
<b>Narraguagus Bay</b> One fixed bright light	44 28. 67 49.8	Wh. tower, 29 ft., on S.E. pt. of Pond Id. Shown eastward, from N. & E. to S.W. by S. Fog-bell	5a   45   12   1856			
<b>PETIT MANAN</b> One fixed and flash. lt.	44 22. 67 51.8	Grey tower, 109 ft. high, on S. end of island. Flash ev. 2 min. Dangerous rocks lie from 2 to 5 miles off. Fog-whistle in each min., 2 bl. of 5 secs, at intervals of 8 and 42 secs .....	2d   125   17   1855			
<b>Prospect Harbour</b> One red & br. rev. lt., 1 m.	43 24.2 68 0.8	From old light-tower on East entrance point. ashes red and white alternately .....	5b   40   11   1870			
<b>Winter Harbour</b> One fixed bright light	44 21.7 68 4.9	On S. point of Mark Island, Frenchman Bay. Shown from N. by E. & E. to N. by W. & W.	5a   37   11   1856			
<b>Frenchman Bay</b> One fixed red light	44 21.3 68 8.	White tower, 56 feet high, on highest part of Egg Rock. Fog-bell .....	●   76   14   1875			
<b>MOUNT DESERT</b> One fixed bright light	43 58. 68 7.7	Grey tower, 60 ft. high, on the rock. Fog-bell	3a   75   14   1857			
<b>BAKER'S ISLAND</b> One fixed and flash. lt.	44 14.4 68 11.9	White tower, 37 ft., on islet S. of Little Cranberry Id., off Mount Desert Id. Flash ev. 1½ m.	4d   105   15   1855			
<b>Bear Island</b> One fixed bright light	44 17. 68 16.2	Red tower, 22 ft. high, on Cranberry Island, entrance of Soames Sound .....	5a   97   15   1839			
<b>Bass Harbour Head</b> One fixed red light	44 13.3 68 20.2	White tower, 26 ft. high, E. side of entrance, S. end of Mount Desert Island .....	5a   56   13   1858			
<b>Burnt Coat Harbour</b> Two fixed bright lights	44 8. 68 27.	Brick towers, 32 and 17 ft. high, at entrance of Refuge Harbour, Swan Island. Beacon lts. in one, N.E. & N., 100 ft. apart, lead in .....	4a   75   14   1872			
<b>Great Spoon Island</b> <i>Building</i>	.....	On E. side of Isle au Haut. (Building) .....	..   ..   ..   ..			
<b>Fly, or Green Island</b> One fixed bright light	44 14.9 68 29.9	White tower on S.E. point of island, in S.E. entrance to Edgemoggan Reach .....	5a   26   9   1856			
<b>SADDLEBACK LEDGE</b> One fixed bright light	41 0.8 68 43.6	Tower, 36 ft. high, lower part white, on S.W. end of island, in entr. of Isle au Haut Bay	5a   51   13   1839			
						1856

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>PENOBSCOT BAY</b>						
Heron Neck One fixed red light	44 1.5 68 51.4	Red tower, 24 ft. high, on S. point of Green's Island, at S.E. side of entrance to Penobscot Bay.....	5d	92	10	1853
Widow Island <i>Proposed</i>	.....	Proposed light.....	..	..	..	....
Deer Island One fixed bright lt.	44 8.1 68 41.9	White tower on Mark Island, Isle au Haut Bay.....	4a	52	12	1857
Eagle Island One fixed bright lt.	44 13.1 68 45.7	White tower, 30 ft. high, on N. point of island, in N.E. entrance to Penobscot Bay, from Isle au Haut Bay .....	4a	106	15	1837
Pumpkin Island One fixed bright lt.	44 19. 68 45.	On island off N.W. end of Little Deer Island, N.W. end of Edgemoggan Reach. Guide to Buck Harbour.....	5a	27	9	1854
MATINICUS ROCK Two fixed bright lts.	43 47. 68 51.	Grey towers, 40 and 50 ft. high, N.N.W. and S.S.E., 80 yds. apart. Steam fog-whistle every $\frac{1}{2}$ min. or fog-bell.....	3a	90	15	1857
Whitehead Island One fixed bright lt.	43 58.7 69 7.1	Grey tower, 34 ft. high. Shown from North to W. $\frac{1}{2}$ S. Steam fog-whistle every minute	3a	70	13	1856
OWL'S HEAD One fixed bright lt.	44 5.5 69 2.3	West side of entr. to Penobscot Bay. Shown from N. $76^{\circ}$ W. to S.S.W. Whistle-buoy E. by S. $\frac{1}{2}$ S. of lighthouse, in 20 fathoms.....	4a	100	16	1826
Brown's Head One fixed bright lt.	44 6.7 68 54.2	White tower on South Fox Island .....	5a	39	12	1856
Rockport Harbour One fixed red light	44 10. 69 3.	Square brick building, painted white, on Indian Island .....	5a	42	11	1875
Negro Island One fixed bright lt.	44 12.1 69 2.6	White tower, 23 ft. high, S. side of entrance to Camden Harbour .....	4a	52	12	1835
Grindels Point One fixed bright lt.	44 16.9 68 56.2	Red tower, 28 ft. high, on N. side of Gilkey Harbour, Long Island.....	5a	39	11	1856
Dice's Head One fixed bright lt.	44 22.9 68 48.8	White tower, 42 ft. high, near Castine, W. side of entrance .....	4a	130	17	1850
Fort Point One fixed bright lt.	44 28. 68 48.4	On S.W. side of entrance to Penobscot River	4a	103	16	1857
Tenant's Harbour One rev. red lt., 1 min.	43 57.6 69 10.8	N.E. side of S. island. Shown from N. $69^{\circ}$ E. to S.W. $\frac{1}{2}$ S.....	5a	66	13	1857
Marshall's Point One fixed bright light	43 55. 69 15.3	At entrance to Herring-gut Harbour. Shown from E. $\frac{1}{2}$ N. to N. by the E. and South .....	5a	31	10	1857
MANHEIGAN ISLAND One rev. br. lt., 1 min.	43 45.9 69 18.6	Grey tower, 36 ft. high, on S. side of island. A steam fog-whistle on Mananas Island, half a mile to W. of lighthouse; two blasts every minute .....	2b	175	19	1851
Franklin Island One fixed and flash. lt.	43 53.5 69 22.2	North end of island, W. side of entrance to St. George's River. Flash every $\frac{1}{4}$ min. ...	4d	54	12	1855
PENMAQUID POINT One fixed bright light	43 50.2 69 30.	White tower, 32 ft. high, at S.W. entrance to Bristol Bay. Shown from N.E. $\frac{1}{2}$ N. to N. by the E. and South .....	4a	75	14	1857.

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.	
<b>Burnt Island</b> One fixed bright light	43 49.5 69 38.1	West side of entrance to Townsend Harbour. Shown from N. by E. to S.S.W. ....	4a	61	13	1821	
						1858	
<b>Hendrick's Head</b> One rev. br. lt., $\frac{1}{2}$ min.	43 49.3 69 41.1	White tower, 30 feet high, on East side of Sheepscott River. Guide to Wiscasset. Shown from S. by E. $\frac{1}{2}$ E. by N. by E. $\frac{1}{2}$ E. ....	4b	40	12	1829	
						1861	
<b>Pond Island</b> One fixed bright light	43 44.4 69 45.9	On W. entrance of Kennebec River. Shown from N.W. $\frac{1}{2}$ W. to S.W. by W. $\frac{1}{2}$ W. Fog-bell ....	5a	54	13	1855	
<b>SEGUIN ISLAND</b> One fixed bright light	43 42.4 69 45.2	Grey tower, 35 ft. high, on island off entrance to Kennebec River. Fog-whistle ....	1a	180	20	1857	
<b>PORTLAND, or CASCO BAY</b>							
<b>HALFWAY ROCK</b> One fixed & flash. lt.	43 39.3 70 1.8	Grey tower, 66 ft. high, on the rock off N.E. entrance to Casco Bay. Bright fixed light, with red flash every minute. Fog-bell ....	3c	75	15	1871	
<b>CAPE ELIZABETH</b> One rev. br. lt., 1 m. One fixed bright lt.	43 33.9 70 11.7	Eastern tower, 53 ft. high, red bands (fix. lt.) W. tower, 53 ft. high (revol. lt.), one red stripe; 300 yds. apart. Shown from N. to S.S.W. $\frac{1}{2}$ W. Steam fog-trumpet, 3 blasts of 5 secs. in quick succession every minute ...	2b	143	18	1828	
				..	143	..	1858
<b>PORLTAND HARBOUR</b> One fixed bright lt.	43 37.4 70 12.1	White tower, 69 ft. high, on the head, S. side, near entrance. Fog-trumpet ....	2a	81	14	1790	
						1855	
<b>Portland Breakwater</b> One red fl. lt. 15 secs.	43 39.3 70 13.8	On N.E. end. Shown from S.W. $\frac{1}{2}$ W. to S.S.E. $\frac{1}{2}$ E. ....	6a	23	8	1855	
<b>Wood Island</b> One rev. red lt., 1 min.	43 27.4 70 19.4	White tower, 47 ft. high, near Saco Harbour. Guide to Winter Harbour. Fog-bell ....	4b	62	13	1858	
<b>Goat Island</b> One fixed bright light	43 21.4 70 25.2	White tower, 25 ft. high, on N. side of mouth of Cape Porpoise Harbour. Shown from N.W. $\frac{1}{2}$ W. to N. by the South and East ....	5a	38	11	1833	
						1857	
<b>BOON ISLAND</b> One fixed bright light	43 7.3 70 28.2	Grey tower, 123 ft. high, on W. part; of York Harbour ....	2a	133	17	1812	
						1854	
<b>NEW HAMPSHIRE.</b>							
<b>Whale's Back</b> One fixed and flash. lt.	43 3.5 70 41.5	White tower, 40 ft. high, on N.E. side of outer entrance to Portsmouth Harbour. Flash every $\frac{1}{2}$ min. Fog-trum. 8 secs. ev $\frac{1}{2}$ min. ....	4d	58	12	1829	
						1855	
<b>Portsmouth</b> One fixed bright light	43 4.2 70 42.2	White tower, 60 ft. high, on S.W. side of inner entrance of harbour. Shown from W.N.W. to S.W. ....	4a	70	14	1804	
						1854	
<b>ISLE OF SHOALS</b> One revolving lt., $\frac{1}{2}$ min.	42 58. 70 38.2	White tower, 40 ft. high, on White Island, S.W. island of Isle of Shoals. Flashes red and bright alternately ....	2b	87	15	1821	
						1858	
<b>MASSACHUSETTS.</b>							
<b>Newbury Port</b> 1. Two fixed bright lts. 2. Two fixed red lights	42 48.5 70 48.7	1. Upper lt., a white tower, 38 ft. high, on S. side of entrance to port. Shown from N.E. by N. to S.S.E. Lower shifting beacon lt., 500 ft. in front .... 2. Leading lts. after entering; in one W. $\frac{1}{2}$ S. 116 yds. apart ....	5a .. ..	54 25 37	13 8 ..	1809 1869 1873	
<b>Ipswich Harbour</b> One fixed & flashing lt. One fixed bright light	42 41.1 70 45.6	White tower, 30 feet high, on South side of entrance. Fix. lt., with flash every $\frac{1}{2}$ min. Beacon lt., fixed, 500 ft. in front; frequently shifted. In one, about W. $\frac{1}{2}$ N., lead in ....	4d 6a	46 20	12 8	1837 1856	

Name and Character of Light.	Lat. N. Long. W. •	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>Annisquam Harbour</b> One fixed bright light	42 39.7 70 40.6	White tower, 34 ft. high, on Wigwam Point, E. side of entrance. Shown from N.W. by W. to N.E. $\frac{1}{2}$ E.....	5a	50	12	1801 1857
<b>Straitsmouth Harbour</b> One fixed bright light	42 39.7 70 34.9	On island, N. of Cape Ann. A local light for Rockport and channel inside the Salvages. Shown eastward, from W. $\frac{1}{2}$ S. to S.S.W. ....	6a	33	10	1850
<b>CAPE ANN</b> Two fixed bright lights	42 38.3 70 34.2	Two stone towers, 112 feet high each, on Thatchers Island, N. by E. $\frac{1}{2}$ E., and S. by W. $\frac{1}{2}$ W., 298 yds. apart. Shown from N. by W. to S.W. by W. A fog-whistle twice every minute .....	1a 1a	165 165	20 20	1861 1861
<b>Gloucester Harbour</b> One fixed red light	42 34.6 70 39.5	White tower, 33 ft. high, on the Eastern Head. Shown from E. $\frac{1}{2}$ N. to N.N.E. $\frac{1}{2}$ E. Fog-bell.....	4a	60	13	1837 1857
<b>Ten Pound Island</b> One fixed bright lt.	42 36.1 70 39.6	White tower, 33 feet high, on island in Gloucester, or Cape Ann Harbour .....	6a	49	12	1821 1850
<b>SALEM</b>						
<b>Baker's Island</b> Two fixed bright lts.	42 32.2 70 46.8	Two white towers, 52 and 29 ft. high, on S. side of N.E. entrance to Salem Harbour, 13 yds. apart. In one, N.W., clears S.E. breaker. Fog-bell .....	4a ..	87 64	15 13	1797 1857
<b>Hospital Point</b> One bright fixed lt.	.....	On N. side of Salem Harbour. Dangers lie to S. and W. of this, in line with the high lt. on Baker's Island. The lt. is brightest in the fairway channel .....	3a	35	10	1871
<b>Winter Island</b> One bright fixed lt.	.....	Red iron tower near Fort Pickering.....	5a	25	8	1871
<b>Derby Wharf</b>	.....	Red light on the end of the wharf .....	5a	15	5	1871
<b>Marblehead Harbour</b> One fixed bright light	42 30.3 70 49.7	White tower, 23 ft. high, on S. side of entrance. Shown from S.W. $\frac{1}{2}$ W. by the North, to S. by W. $\frac{1}{2}$ W.....	6a	43	12	1835 1856
<b>Egg Rock</b> One fixed red light	42 26. 70 53.5	On a house to E.N.E. of Nahant. Shown from S.W. by W. to N. by E. $\frac{1}{2}$ E.....	5a	87	8	1856
<b>BOSTON BAY</b>						
<b>OUTER MINOTS LEDGE</b> One fixed bright lt.	42 16.1 70 45.5	Grey granite tower, 100 ft. high, on one of the Cohasset Rocks. Fog-bell .....	2a	92	14	1860
<b>BOSTON</b> One rev. br. lt., $\frac{1}{2}$ m.	42 19.6 70 53.4	White tower, 80 feet high, on Little Brewster Island, North entrance of harbour. Fog-trumpet 7 secs. in every 50 secs. ....	2b	111	17	1784 1859
<b>Narrows</b> One fixed red light	42 19.3 70 55.2	Pile lt.-bo., on W. end of Spit from Brewster Island. In one with Long Island Head lt., clears Harding's Ledge.....	5a	46	12	1856
<b>Long Island Head</b> One fixed bright lt.	42 19.8 70 57.4	White tower, 27 ft high, on N.E. end of island	4a	80	15	1819 1855
<b>Plymouth</b> Two fixed bright lights	42 0.2 70 35.7	Two white towers, 34 ft. high, on Gurnet Point, N. side of harbour. In one, N.W. 10 yds. apart. Shown from N. by W. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ S. ....	6a	102	15	1769 1856
<b>Duxbury</b> One bright fixed lt.	42 2. 70 40.	White tower, 31 ft. high, on Pier. Fog-bell near .....	4a	47	10	1816 1871

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Miles	Visible in Miles	Year established.
<b>CAPE COD BAY</b>						
Race Point	42 3.7	Red iron tower, on N.W. point of Cape Cod.	4d	35	11	1816
One fixed & flash. lt.	70 14.3	Flash every 1/4 minute. Daboll trumpet in fogs every min., 2 blasts.				1855
Long Point	42 1.9	On shoal, S. W. entr. to Provincetown Harb.	5a	37	11	1826
One fixed bright lt.	70 9.8	Shown from S.W. by W. 1/2 W. to N.N.E. 1/2 E. Fog-bell				1856
Provincetown Harbour	42 1.	Dark-brown brick tower, 41 ft. high, at Wood End, near entrance	5b	41	11	1872
One flash. red lt. 15 s.	70 11.					
Mayo's Beach	41 55.8	Head of Wellfleet Bay. Shown from S. 1/2 W. to S. W. 1/2 W.	6a	36	10	1828
One fixed bright lt.	70 1.7					1856
Billingsgate Island	41 52.3	Red tower, 34 ft. high, on N. side of entrance to Wellfleet	4a	52	12	1822
One fixed bright lt.	70 3.8					1858
Sandy Neck	41 43.3	White tower, 44 feet high, on West side of entrance to Barnstable. Shown from N.W. by W. to W. by S. 1/2 S.	4a	59	11	1836
One fixed bright lt.	70 17.1					1857
<b>CAPE COD HIGHLANDS</b>						
Cape Cod. One fixed bright light	42 2.3	White tower, 55 ft. high, on Cape Truro, East side of Cape Cod. Shown from N.W. 1/2 W. to S. by E. 1/2 E. Steam fog-whistle, every 1/2 min.	1a	195	20	1797
One fixed bright light	70 3.3					1857
Nauset Beach	41 51.6	Three white buildings at Eastham, E. side of Cape Cod. N. and S., 50 yds. apart. Shown from N. 1/2 W. to S.	6a	93	10	1837
Three fixed bright lts.	69 56.7					1856
Chatham Harbour	41 40.3	White towers, 46 ft. high each, on W. side N. and S., 33 yards apart. Shown from N. by E. 1/2 E. to S.S.W. 1/2 W.	4a	70	14	1808
Two fixed bright lights	69 56.6					1857
Monomoy Point	41 33.5	Red iron tower, 30 ft. high, on Cape Malabar, S. end of Cape Cod. Shown from N.E. by N. to N. by E. 1/2 E.	4a	38	10	1823
One fixed bright light	69 59.3					1857
Pollock Rip Lightvessel	41 32.1	Painted red; off Chatham, 4 miles E. 1/2 S. from Monomoy lt. Fog-whistle, 2 blasts of 5 and 3 secs. in each minute	●	45	12	1849
One fixed bright light	69 54.8					
Shoewful Lightvessel	41 34.	Painted green, 2 1/2 miles S.S.W. 1/2 W. from Monomoy Point. Fog-bell, horn, and gun	●	40	11	1852
One fixed red light	69 59.2					
Handkerchief Lt.-Vessel	41 39.6	Schooner-rigged, straw colour. In 5 1/2 fathoms, 1/2 mile from S. part of shoal. Fog-bell, horn, and gun	●	40	10	1855
One fixed bright light	70 3.3					
Bass River	41 39.1	North side of Vineyard Sound. Shown from E. by S. 1/2 S. to W. by N.	5a	40	8	1854
One fixed bright light	70 9.9					
Bishop and Clerks	41 34.4	Grey tower, 47 ft. high, on N. part of shoal. Fog-bell.	4b	59	13	1858
One rev. br. lt., 1/2 min.	70 14.7					
Succomnesset Shoal Lt.-V.	41 32.	Schooner-rigged, with red and white squares. In 6 fathoms. Between Succomnesset and Eldridge Shoals. Fog-bell, horn, and gun	●	40	10	1854
One fixed bright light	70 26.7					
<b>NANTUCKET</b>						
Nantucket	41 23.4	White tower, 60 ft. high, on N.E. point of island. Shown from S.S.E. to S.E. by S. ...	3a	70	14	1784
One fixed bright light	70 2.4					1857
Sankaty Head	41 17.	Tower, 65 ft. high, white, red, white, on S.E. part of Nantucket Island. Flash of 10 secs. every minute. Shown from N. by W. 1/2 W. to S. by W. 1/2 W.	2d	150	20	1849
One fixed and flash. lt.	69 57.6					
South Shoal Lightvessel	40 56.	Schooner-rigged, red. In 14 fathoms. Two miles S. of shoal. Fog-bell, horn, and gun	●	44	12	1858
Two fixed bright lights	69 51.5					

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above the Water, Visible in Miles.	Year established.
<b>VINEYARD SOUND</b>					
Hyannis Harbour One fixed red lt.	41 38. 70 17.	White building, inside the breakwater. Shown from S. by E. $\frac{1}{4}$ E. to W.S.W. $\frac{1}{4}$ W.....	●	42   10   1849	
Cross Rip Lt.-Vessel One fixed bright lt.	41 26.7 70 17.1	Black, with white streak. In 8 fathoms; N.W. of Nantucket. Fog-bell, horn, and gun.....	●	39   10   1828 1864	
Nantucket Cliff Two fixed bright lts.	.....	On the beach, N.W. of harbour, N.W. and S.E. 100 yards apart .....	..	8   4   1838 ..   10   ..   1856	
Nantucket Beacon One fixed bright lt.	.....	From a window on the rising ground, 1 mile behind Brant Point light.....	..	10   5   1861	
Brant Point One bright fixed lt.	41 17.3 70 5.2	A red tower, 42 ft. high, on West point of entrance to Nantucket Harbour. In one with the beacon light it clears Black Flat to starboard .....	4a   46   12   1759		
Cape Poge One fixed bright lt.	41 25.2 70 26.7	White tower, 36 feet high, on N.E. point of Martha's Vineyard Island. Shown from W. $\frac{1}{4}$ S. to S.E. .....	4a   57   13   1801 1857		
Edgartown One fixed bright lt.	41 23.4 70 29.8	On N.W. side of entrance to harbour. Shown from N. $\frac{1}{4}$ W. to W. $\frac{1}{4}$ S. ....	4a   37   12   1828 1856		
Holmes Hole 1. One fix. bright lt. 2. One fixed red lt.	41 28.9 70 36.	1. White tower, 33 ft. high, on W. Chop of harbour. Shown from W. by N. $\frac{1}{4}$ N. to S. $\frac{1}{4}$ E. 2. White iron lt.-ho. on E. Chop, E. entr. pt. of harbour. Lt. shown betw. S.E. by E. & W. by N. $\frac{1}{4}$ N.....	4a   69   13   1817 ●   77   14   1876		
Nobsque Point One fixed bright lt.	41 30.9 70 39.	White house, E.S.E. of entrance to Wood's Hole Harbour. Shown from N.E. by E. to W. by N. $\frac{1}{4}$ N. Fog-bell .....	5a   80   15   1828 1856		
Tarpaulin Cove One flashing br. lt.	41 28.1 70 45.1	White tower, 32 ft. high, on West side, on Naushen Island. Flashes every $\frac{1}{2}$ minute. Shown from N.E. by E. $\frac{1}{4}$ E. to S.W. ....	5a   80   13   1817 1870		
Vineyard Sound Lt.-V. Two fixed bright lts.	41 22. 70 58.7	Painted red, with yellow streak. In 13 $\frac{1}{2}$ fms., near Sow and Pigs Rocks. Two red balls. Steam fog-whistle ev. $\frac{1}{2}$ min.....	●   34   9   1847 ..   23   ..   1855		
Hen & Chickens Lt.-V. One bright fixed lt.	41 27. 71 0.8	Gooseberry Point. Painted lead-colour; in 10 fms., $\frac{1}{2}$ a mile S.E. of reef. Fog-bell. Horn. Whistle-buoy in 7 $\frac{1}{2}$ fms., 1 m. S.W. of it.-ves.	●   40   10   1864		
SOW AND PIGS Building	.....	Building on the rocks .....	..   ..   ..   ..		
GAYHEAD	41 30.9 70 49.8	Red tower, 41 ft. high, on W. pt. of Martha's Vineyard Island. Flash ev. 10 secs., every fourth flash being red. A rocky shoal to N.W., 1 $\frac{1}{2}$ mile. Shown from E. $\frac{1}{4}$ N. to S.S.E.	1b   170   20   1858		
<b>BUZZARD'S BAY</b>					
Cuttlyhunk One fixed bright lt.	41 24.8 70 56.6	White tower, 32 feet high, on S.W. point of island. Shown from S. to N.E. $\frac{1}{4}$ N. ....	5a   42   12   1823 1857		
Dumpling Rock One fixed bright lt.	41 32.3 70 54.9	White tower, 32 ft. high, off Round Hill. Shown from N. by W. $\frac{1}{4}$ W. to S.W. by W. Fog-bell	5a   42   12   1828 1857		
NEW BEDFORD One bright fixed lt.	41 35.7 70 53.8	On N.W. angle of Fort, Clark's Point, W. side of entrance. Shown from N. by E. $\frac{1}{4}$ E. to W. by N. $\frac{1}{4}$ N. Fog-bell..	5a   68   13   1800 1869		

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Height above H. W. feet	Visible in Miles.	Year established.
<b>BUZZARD'S BAY—(continued).</b>					
Palmer's Island One fixed bright lt.	41 37.6 70 54.2	On N.E. end, in New Bedford Harbour. Shown from S.E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ E. ....	5a   32   9	1849 1856	
Med's Point One fixed bright lt.	41 39. 70 47.4	White tower, 33 ft. high, on N. side of Mattapoisett Harbour. Shown from S.E. $\frac{1}{2}$ E. to S. by W. $\frac{1}{2}$ W. ....	6a   43   11	1849 1856	
Bird Island One rev. br. lt., 1 $\frac{1}{2}$ m.	41 40.1 70 42.7	East side of entrance to Sippican Harbour. Shown from N. by E. $\frac{1}{2}$ E. to N.N.W. $\frac{1}{2}$ W. ....	5b   35   10	1819 1857	
Wing's Neck One fixed bright lt.	41 40.8 70 39.3	Head of Buzzard's Bay, in Sandwich. Shown from S. $\frac{1}{2}$ W. to N.E. $\frac{1}{2}$ N. ....	5a   44   10	1849 1856	
<b>RHODE ISLAND.</b>					
Brenton's Reef Lt.-Ves. Two fixed bright lights	41 25. 71 21.5	Painted straw colour. In 18 fathoms, E. side of entrance to Newport. Fog-bell and horn	•   50   12 40	1850	
BEAVER TAIL One fixed bright light	41 26.9 71 23.6	Square granite tower, 74 ft. high, on S. point of Conanicut Island, entrance to Newport Harbour. Shown from N. $\frac{1}{2}$ E. to N.E. $\frac{1}{2}$ N. Fog-trumpet 2 blasts ev. 1 $\frac{1}{2}$ m. ....	3a   96   16	1793 1856	
Lime Rock One fixed bright light	41 28.6 71 19.2	On the rock, S. side of Newport Harbour ....	6a   30   9	1854	
<b>NARRAGANSETT BAY</b>					
Newport Harbour One fixed bright lt.	41 29.6 71 19.3	On North end of Goat Island. Fog-bell ....	4a   33   11	1823 1857	
Rose Island One red fixed light	.....	On S.E. point of the island ....	6a   ..   6	1869	
Dutach Island One fixed bright lt.	41 29.8 71 23.9	White tower, 35 ft. high, on S. end of island. Fog-bell every 15 secs. ....	4a   56   14	1826 1857	
Wickford One fixed bright lt.	41 34.2 71 26.	White tower, 33 ft. high, on Poplar Point. Shown from N.E. by E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ E. ....	5a   51   12	1831 1855	
Prudence Island One fixed bright lt.	41 36.3 71 17.9	White tower on East side, on Sandy Point. Shown from N. by E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S. ....	5a   30   10	1853	
Bristol Ferry 1. One fixed br. lt. 2. One fixed red lt.	41 38.5 71 15.2	1. On N. side of entrance to Mount Hope Bay. Shown from N.E. to E. by S. .... 2. On beacon on Mussel Shoal, S.E. side of channel. Fog-bell 20 secs. ....	6a   35   10 6a   27   9	1855 1873	
Warwick One fixed bright lt.	41 40. 71 22.4	On S. end of neck. Shown from N.E. by N. to N.W. by W. $\frac{1}{2}$ W. ....	4a   54   14	1826 1856	
Providence River One fixed bright lt.	41 42.5 71 21.	Granite tower, 50 ft. high, on end of spit of Cominicut Point, West side of entrance of river. Shown from N. by E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ W. Fog-bell. Above this, five fixed lts. are shown in Providence River. ....	4a   50   11	1808	
POINT JUDITH One rev. lt., 15 secs.	41 21.6 71 28.6	White tower, 45 ft. high, on S. extremity of Narragansett shore. Shown from W. $\frac{1}{2}$ S. to N.E. by N. Fog-trumpet. ....	4a   67   14	1810 1857	
BLOCK ISLAND 1. One fixed bright lt. 2. One fixed bright lt.	41 13.8 71 34.3	1. Gray granite tower, 50 ft. high, on N. pt. of Id. Shown northwards, from S.S.W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S. .... 2. On S.E. end of Id. Brick tower, 67 ft. high. Fog-trumpet. ....	4a   75   12 1a   200   21	1829 1869 1875	

Name and Character of Light.	Lat. N. Long. W. e s	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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<b>WATCH HILL</b> One fixed bright light	41 18.2 71 51.8	Granite tower, 40 ft. high, on Watch Point, 3 miles S.E. of Stonington. Shown southwards, from W. $\frac{1}{2}$ N. to E. $\frac{1}{2}$ N. ....	4a	62	14	1808 1857
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## CONNECTICUT AND NEW YORK.

## BLOCK AND LONG ISLAND SOUNDS

<b>Stonington</b> One fixed bright lt.	41 19.6 71 54.	White tower, 30 feet high, on East side of entrance. Shown from W. $\frac{1}{2}$ N. to E. by N. $\frac{1}{2}$ N. ....	6a	50	12	1823 1855
<b>Eel Grass Lightvessel</b> One fixed bright lt.	41 18.4 71 56.7	On the shoal, painted lead colour. Fog-bell and horn ....	●	32	10	1835 1857
<b>Morgan's Point</b> One fixed bright lt.	41 18.9 71 59.1	Granite tower, 34 ft. high, on North side of Fisher's Island Sound. Shown from S.W. by W. $\frac{1}{2}$ W. to E. $\frac{1}{2}$ N. ....	6a	44	11	1831 1855
<b>North Dumpling Id.</b> One fixed <i>red</i> light	41 16. 72 3.	In Fisher's Island Sound. Fog-bell ....	6a	70	12	1855 1868
<b>NEW LONDON</b> One fixed bright lt.	41 19.1 72 5.	White tower, 33 ft. high, on West side of entrance to River Thames. Shown eastward from S. $\frac{1}{2}$ W. to N. $\frac{1}{2}$ E. Fog-trumpet every 20 seconds. ....	4a	86	14	1800 1857
<b>Bartlet's Reef Lt.-Ves.</b> Two fixed bright lts.	41 16. 72 7.5	On reef, off New London. Painted black with white streak. Fog-bell and horn. ....	● ..	28	10 35	1846 1857
<b>LITTLE GULL ISLAND</b> One bright fixed lt.	41 12.3 72 6.7	Granite tower, 74 ft. high, on S. side of main entrance between Block and Long Island Sounds. Shown all round. Steam fog-trumpet every $\frac{1}{4}$ minute ....	2a	92	16	1806 1870
<b>RACE ROCK</b> Rev. <i>red</i> and br. lt. every 30 secs.	41 14.6 72 2.8	Lt.-ho., surmounted by black lantern, on W. extr. of Fisher Id., N. side of entr. to Long Island Sound. Fog-bell, 2 blows once in ev. 20 secs. ....	●	66	14	1878
<b>Gardiner's Island</b> One fixed bright lt.	41 8.3 72 8.2	On N. point. Shown northward from S. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S. ....	6a	29	6	1855
<b>Plum Island</b> One rev. br. lt., $\frac{1}{2}$ m.	41 10.4 72 13.6	Grey tower, 34 ft. high, on W. end; N.E. extremity of Long Island. Guide through Plum Gut. Fog-bell $\frac{1}{4}$ minute ....	4a	63	12	1827 1856
<b>Long Beach Bar</b> One fixed <i>red</i> light	41 6.3 72 17.8	Pile lighthouse in 5 ft. water, at entrance to Orient & Grempoint Harbours, Long Island. Fog-bell every $\frac{1}{4}$ minute ....	5a	56	13	1871
<b>Cedar Island</b> One fixed bright lt.	41 2.4 72 15.3	White tower, 31 ft. high, at entrance to Sag Harbour, Long Island ....	6a	34	10	1839 1855
<b>Saybrook Point</b> One fixed bright lt.	41 16.3 72 20.3	White tower, 70 ft. high, on Lynde Point, W. side of Mouth of Connecticut River. Shown southward from W. by S. $\frac{1}{2}$ S. to E. Bell ...	4a	80	13	1803 1857
<b>Calves' Island</b> One fixed bright lt.	41 19.5 72 21.	Two miles below Essex Town, East side of river ....	6a	...	3	1856
<b>Brockways Reach</b>	.....	Fixed bright lt., 3 miles above Essex Town ...	6a	...	3	1856
<b>Devil's Wharf</b>	.....	Fixed bright lt., 4 miles above Essex Town ...	6a	...	3	1856

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>LONG ISLAND SOUND—(continued).</b>						
Cornfield Point Lt.-Ves.	41 13.5	Red; sloop-rigged. In $\frac{7}{8}$ fathoms, on middle	•	40	10	1856
One fixed red lt.	72 22.8	of S. side of Long Sand Shoal. Fog-bell and horn .....				
HORTON'S POINT	41 5.1	Red tower, 30 ft. high, on the point. Shown	3a	110	18	1857
One fixed bright lt.	72 26.4	northward from S. by W. $\frac{1}{2}$ W. to N. by E. $\frac{1}{2}$ E.....				
FAULKNER'S ISLAND	41 12.7	White tower, 44 ft. high, on island off Guilford	4d	98	15	1801
One fixed and flash. lt.	72 38.9	Harbour. Flash every $\frac{1}{4}$ min. Shown all around. Fog-bell .....				1856
NEW HAVEN HARB.	41 14.	From oak-storyed dwelling on S.W. ledge, at	..	56	13	1876
One fixed bright light	72 54.8	entrance of harbour. Fog Bell ev. 15 secs. .....				
Newhaven	41 17.5	On end of Long Wharf.....	6a	21	8	1861
One fixed red light	72 55.					
STRATFORD SHOALS	41 3.5	From granite lt.-ho. on Middle Ground. Fog-	•	55	13	1877
Rev. br. lt. 15 secs.	73 5.7	bell, 3 blows once every 30 seconds .....	..	..	..	1878
Stratford River	41 9.1	Tower, striped black and white, on W. entr.	3b	53	12	1821
One rev. br. lt. $1\frac{1}{2}$ m.	73 6.2	pt. of river. Fog-bell, 4 strokes at intervals of 10 secs., followed by silence of 30 secs. ....				
Bridgeport	41 9.4	White and red tower on the shoal, W. side of	6a	60	10	1871
One fixed red light	73 10.5	entrance to river. Shown all round. Fog-bell. ev. 15 secs. ....				
Penfield Reef	41 7.1	A white tower on the reef, near the S.W. en-	4b	46	13	1874
One red flash. lt. 5 a.	73 12.8	trance point of Black Rock and Bridgeport				
Harbou.		Fog-bell, 3 bl. ev. 20 secs. ....				
Old Field Point	40 58.6	White tower, 34 feet high, on South side of	4a	67	13	1823
One fixed bright lt.	73 6.8	Long Island Sound. Shown northward from W. by S. $\frac{1}{2}$ S. to E. by S. ....				1856
Black Rock Harbour	41 8.5	White tower, 35 ft. high, on Fairweather	5a	52	12	1808
One fixed bright lt.	73 12.7	Island. Shown northward from S.W. by W. $\frac{1}{2}$ W. to E. ....				1854
EATON'S NECK	40 57.2	White tower, 60 feet high, on East side of	3a	142	17	1798
One fixed bright lt.	73 23.4	entrance to Huntington Bay. Shown north- ward from W. to S.E. by E. $\frac{1}{2}$ E. In fogs, a siren (or steam fog-horn) every $\frac{1}{4}$ min. ....				1857
Lloyd's Harbour	40 54.9	White tower, 34 ft. high, on S.E. point of	5a	48	10	1857
One fixed bright lt.	73 25.7	Lloyd's Neck, N. side of entrance .....				
Norwalk Island	41 2.9	White granite tower, 34 ft. high. Bright lt.,	4b	40	11	1826
One fixed & flash. lt.	73 24.9	with red flash every 70 seconds. At West entrance of Norwalk River. Guide to N. shore of Long Island Sound, and to river. Shown southward from W. by S. $\frac{1}{2}$ S. to E. by S. $\frac{1}{2}$ S. A rocky ledge half a mile to S.S.W. ....				1857
Great Captain Island	40 58.9	White granite tower, 34 feet high, near	4a	62	12	1829
One fixed bright lt.	73 37.1	Greenwich Point. Shown all round .....				1858
Execution Rocks	40 52.6	White tower, 42 ft. high, on rock off Sands	4a	54	12	1848
One fixed bright lt.	73 43.9	Point. Steam fog-trumpet .....				1856

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>LONG ISLAND SOUND —(continued)</b>						
SANDS POINT	40 51.9	White tower, 41 ft. high, on East side of entrance to Cow Bay, Long Island. Shown northward from S.W. & S. to E. by N. & N.	4b	53   15	1809	
One rev. br. lt., $\frac{1}{2}$ m.	73 43.5					1856
Stepping Stones	40 49.4	From dwelling on W. Stepping Stone Rock, E. River, entr. to Long Island Sound. Fog-bell, 2 strokes ev. 20 secs.	..	47   10	1877	
One fixed red light	73 46.2					
Throgg's Neck	40 48.3	White tower, 61 ft. high, on S.E. point of Neck, at N.W. entrance to E. River. Shown southward from W. to N.N.E. & E. Bell ...	6a	66   10	1826	
One fixed bright lt.	73 47.1					1855
North Brother	40 48.	On S. part of island, in the East River, between Long Island Sound and New York .....	6a	50   10	1809	
One bright fixed lt.	73 51.					
Blackwell Island	40 46.2	Gray tower, 40 ft. high .....	4a	54   13	1872	
One fixed red light	73 56.1					
<b>NEW YORK AND NEW JERSEY.</b>						
MONTAUK POINT	41 4.2	White tower, 97 feet high, at E. end of Long Island. A brighter flash every 2 minutes. Shown eastward from N.W. by W. & W. to S.W. Fog-trumpet once every minute .....	1d	160   20	1795	
One fixed and flash. lt.	71 51.1					1860
GREAT WEST, or SHIN-NECOCK BAY	40 50.9	Red brick tower, 150 ft. high, on Pondiqueg Point, N. side of Shinnecock Bay, 1 $\frac{1}{2}$ miles inland from S. coast of Long Island. Shown southward from W. by S. & S. to N.N.E. & E.	1a	160   20	1867	
One fixed bright light	72 29.9					
FIRE ISLAND	40 37.9	Yellow tower, 150 ft. high, on E. side of inlet, S. side of Long Island. Shown southward from W. & S. to E. & N. ....	1b	166   22	1826	
One rev. br. lt., 1 min.	73 12.8					1868
NEW YORK BAY						
SANDY HOOK LT.-V.	40 26.9	Painted red, in 14 fms., $\frac{1}{2}$ miles from Sandy Hook and Navesink lts. Fog-bell .....	●	45   10	1823	
Two fixed red lights	73 52.					1854
"Scotland" Wreck Lightvessel	.....	Moored in 7 fms. at entr. to New York Bay, N.E. & N. from Highlands of Navesink lts. Fog-bell	..	..   ..   ..	....	
HIGHLANDS OF NAVESINK	40 23.7	Grey granite towers, 58 ft. high each, South side of Sandy Hook, 100 yds. apart. Shown eastward from N.W. to S. by E. ....	1a	248   22	1828	
Two fixed bright lts.	73 58.8			1a	248   22	1862
SANDY HOOK	40 27.6	S. entrance to New York Harbour. East lt. is on N. point of Sandy Hook, N. by W., $\frac{1}{2}$ of a mile, and West light N.W., $\frac{1}{2}$ of a mile from main light. A steam fog-whistle every $\frac{1}{2}$ of a minute .....	3a	90   15	1762	
Three fixed bright lts.	73 59.8		4a	35   9	1868	
			6a	35   10		
Main Channel	40 25.2	Lower lt. on Canover Beacon, South shore of Sandy Hook Bay. Upper light on Chapel Hill, $\frac{1}{2}$ mile to S. by W. ....	3a	60   12	1856	
Two fixed bright lts.	74 4.		2a	224		
Gedney's Channel	40 26.9	Leading lights near Point Comfort, $\frac{1}{2}$ of a mile apart, in one bearing W. by S. ....	2a	40   12	1856	
Two fixed bright lts.	74 7.9		3a	76   14		
Swash Channel	40 33.7	Range lts. on Staten Island, near Elm Tree Station and New Dorp, 1 $\frac{1}{2}$ mile apart; in line, bearing N.W. ....	2a	59   14	1856	
Two bright fixed lts.	74 6.9		3a	189		
Princes Bay	40 30.4	Grey tower, 33 ft. high, near S.E. end of Staten Island. Flash every 3 minutes. Guido to Amboy and Raritan River. Shown from E. by N. & N. to S.W. & W. ....	3d	106   16	1828	
One fixed & flash. lt.	74 12.5					1857
Fort Tompkins	40 36.	White tower, 46 ft. high, on Staten Island, W. side of Narrows. Shown eastward from N. & W. to S.W. & S. Fog-bell at Fort Lafayette, 1 blow and 2 blows alternately every 20 secs. ....	4a	89   15	1839	
One fixed bright lt.	74 2.9					1855
Robbins Reef	40 39.4	White stone tower, 51 ft. high, off Tompkinsville, N.W. part of New York Harbour. Fog-bell every 15 secs. ....	4a	66   13	1839	
One fixed bright lt.	74 3.6					1865
Governor Island	40 41.5	N.W. end. Fog-bell twice every 20 secs. ....	..	..   ..   ..	....	
	74 1.2					

Name and Character of Light.	Lat. N. Long. W. ° .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Visible in Miles.	Year established.
<b>NEWARK BAY</b>					
Bergen Point One fixed bright lt.	40 38.5 74 8.6	On a reef, at entrance to Newark Bay. Fog-bell.....	6a   40   10	1848 1858	
Corner Stake One fixed red lt.	40 38.7 74 9.8	Opposite Elizabeth Port .....	6a   ..   ..	1857	
Passaic River One fixed bright lt.	40 41.7 74 7.3	At mouth of river. Fog-ball .....	6a   40   10	1849	
Elbow Beacon One fixed bright lt.	40 42.1 74 7.1	On shoal point, $\frac{1}{2}$ a mile N. of Passaic light ...	6a   ..   ..	1854	
<b>NEW JERSEY.</b>					
<b>BARNEGAT</b> One rev. br. lt., 10 secs.	39 45.8 74 6.1	Red and white tower, 159 ft. high, on N. end of Long Beach, S. side of inlet. Shown all round .....	1b   165   22	1831 1858	
<b>TUCKER'S BEACH</b> One fixed and flash. lt.	39 30.3 74 16.8	Grey tower, 44 ft. high, at $\frac{1}{2}$ of a mile northward of the entrance to Little Egg Harbour. Shown eastward from N. by W. & W. to N. W. by W. & W. Flash every minute.....	4d   ..   12	1867	
<b>ABSECOM</b> One fixed bright light	39 22. 74 25.6	Tower, 150 ft. high, painted red & wh. bands, on S. side of inlet. Shown from N.E. by N. to S. W. Whistle-buoy in 8 fms., $\frac{1}{2}$ miles E. from lighthouse .....	1a   167   22	1865	
Hereford Inlet One fixed red light	39 0. 74 48.	Straw coloured building surrounded by trees	4a   61   13	1874	
<b>CAPE MAY, or FIVE-FATHOM BANK LT.-V.</b> Two fixed bright lts.	38 48.3 74 36.2	Painted straw colour. In 9 fms., E. 28 miles from Cape Henlopen lt., and S.E. of Five-Fathom Bank. Fog-whistle, 4 secs. in every minute. Pass S. and E. of light- vessel.....	•   45   10 ..   40   ..	1839 1878	
<b>CAPE MAY</b> One br. rev. lt., $\frac{1}{2}$ min.	38 55.8 74 57.3	Grey tower, 145 ft. high, on N. side of entrance to Delaware Bay. Shown all round .....	1b   152   19	1823 1859	
<b>CAPE HENLOPEN</b> One fixed bright light	38 46.6 75 4.7	White tower, 82 ft. high, on S. side of entr. to Delaware Bay. Shown from N.W. & W. to S. & E. Fog-siren, 6 secs. in every $\frac{1}{2}$ min....	1a   180   20 4a   33   10	1792 1855	
Beacon Light One fixed light	.....	A white screw pilet.-ho., 1 mile N.W. of main light. Shown from N.W. & W. to S. & E....	4a   45   11	1864	
<b>DELAWARE BAY AND RIVER</b>					
Breakwater One fixed & flash. lt.	38 47.9 75 6.1	White tower, 45 ft. high. Flash every 45 secs. Fog Bell every 10 secs.....	4d   47   10	1849 1855	
Brandywine Shoal One fixed bright lt.	38 59.1 75 6.5	Red iron screw pile tower. Fog Bell.....	3a   46   13	1850 1857	
Fourteen-foot Bank Lightvessel Two fixed br. lts.	39 3. 75 11.	Lt.-ves. painted yellow, in $\frac{1}{2}$ fms., $\frac{2}{3}$ cables E. of bank, 5 miles N.N.W. & W. from Brandywine lt., and $\frac{2}{3}$ miles S. by E. & E. from Cross Ledge lt. Pass eastward of her .....	..   ..   10	1876	
Maurice River One fixed bright lt.	39 11.6 75 1.8	White tower, 39 ft. high, on S.W. side of Haystack Island. Shown from S.W. by W. & W. to S.E. & S.....	6a   48   11	1849	
Leispillion River One bright fixed lt.	38 56.7 75 18.5	Gray tower near the entrance .....	6a   48   11	1873	
Egg Island One fixed bright light	39 10.5 75 8.1	White screw pile lighthouse on N. side of bay. Shown from N.W. & N. to E. by S....	5a   45   11	1837 1856	
Mahon River One fixed bright lt.	39 10.5 75 24.3	New tower, painted buff, 660 yds. N. by E. & E. from position of old lt. ....	5a   53   13	1831 1875	
Cross Ledge Shoal One fix. & flashing lt. every $\frac{1}{2}$ minute	39 9.5 75 14.5	Iron lt.-ho., $\frac{1}{2}$ mile within S. extr. of shoal, W. by S. $\frac{4}{3}$ miles from Egg Id. lt., and E. by S. $\frac{2}{3}$ miles from Mahon lt. Fog-bell...	4c   51   12	1875	

Name and Character of Light.	Lat. N. Long. W. ○ ,	Description, &c. (Bearings by compass from the light.)	Inscription of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>DELAWARE BAY AND RIVER—(continued).</b>						
Cohansey	39 20.3	Lt.-ho., 40 ft., on W. side of creek, E. side of bay. Shown to S. from N.W. & W. to S.E. & S.	5a	46	11	1838
One fixed bright lt.	75 21.3					1855
Ship John Shoal	39 18.3	Black lt.-house and brown dwelling. Fog-bell 3 strokes once in ev. 45 secs.	●	63	13	1877
One fixed red light	75 22.7					
Bombay Hook	39 21.8	Bright lt. from tower, on N.W. end of island	4a	46	11	1831
Port Penn	39 29.5	From black tower, in trees, and white framework, $\frac{1}{2}$ m. apart. In line lead up channel fr. m. S.E.-ward	..	133	..	1877
Two fixed bright lts.	75 35.7		..	33	..	...
Finn Point	39 35.6	From black tower, in trees, and white framework, $\frac{1}{2}$ m. apart. In line lead up channel from southward	..	98	..	1877
Two fixed bright lts.	75 32.7		..	23	..	...
Newcastle	39 38.	Two fix. br. leading lts., $\frac{1}{2}$ mile apart. To mark channel passing Pea Patch Island	..	..	..	1876
Deep Water Point	39 41.	Two fix. br. leading lts., $\frac{1}{2}$ mile apart. To mark channel at upper part of Bulkhead Shoal	..	..	..	1876
Christiana River	39 43.3	Br. fix. lt. at Wilmington, N. side of river	4a	48	11	1835
Fort Mifflin	39 52.1	Bright lt. on pier, opposite the fort. Fog Bell	6a	28	7	1849
Schuylkill River	39 53.3	Two fix. br. lts. In line, lead through dredged channel into Schuylkill River	..	..	..	1876
<b>FENWICK ISLAND</b>						
One fixed and flash. lt.	38 27.	White brick tower, 82 ft. high; fixed lt., with flash every 2 min. Shown eastward from North to South	3d	86	15	1858
75 4.1						
<b>VIRGINIA.</b>						
Winter Quarter Shoal	37 57.	Painted red, in 11 fathoms, S.E. by E. & E., 2 miles from centre of shoal	..	15	11	1874
Lightvessel	75 5.5					
One fixed bright light						
<b>ASSATEAGUE ISLAND</b>						
One bright fixed light	37 54.6	Red brick tower, 129 ft. high, 2 miles from S.W. point of island. Shown eastward from N.N.E. & E. to W.S.W. Very dangerous shoals lie from 5 to $11\frac{1}{2}$ miles to	1a	150	19	1838
75 21.1		N.E., E., and S.E.				1867
<b>Hog Island</b>						
One fixed bright light	37 23.3	White tower, 45 ft. high, on W. point of the island. Guide to Great Matchipongs Inlet. Shown eastward from N. by W. & W. to W. by S. & S.	4a	60	13	1852
75 41.6						1855
<b>CHESAPEAKE BAY</b>						
<b>CAPE CHARLES</b>						
One fixed & flash. lt.	37 7.1	New circular white tower, 150 ft. high, near N.E. end of Smith Island. North side of entrance to Chesapeake Bay. Flash every 45 secs. Shown all round	1c	150	21	1864
75 53.2						
<b>CAPE HENRY</b>						
One fixed bright lt.	36 55.5	White tower, 82 ft. high, near sand-hills on S. side of entrance	2a	129	17	1791
76 0.2						1857
<b>The Thimbles</b>						
One br. fix. lt., red fl.	37 0.	Screw pile lighthouse on the Horseshoe Bank, in 11 ft. Pass to southward. Red flash every 15 secs. Fog-bell every 5 secs.	4c	44	12	1872
76 14.						
<b>Old Point Comfort</b>						
One fixed bright lt.	37 0.	White tower, 40 ft. high, on N. side of entr. to Hampton Roads and James River. Shown from N. & W., eastward, to W. & S. Fog-bell every 10 secs.	4a	48	11	1802
76 18.4						
<b>Craney Island Shoal</b>						
One fixed bright lt.	36 53.5	Piled on W. side of entr. to Elizabeth River. Fog-bell ev. 12 secs. Shown eastward from W. by N. & N. to S. by W. & W.	5a	40	11	1820
76 20.3						1854
<b>Lambert Point</b>						
One fixed red light	36 52.2	Screw pile lt.-ho. off Lambert Point, in 6 ft. water, E. side of channel to Elizabeth River	5a	36	10	1872
76 20.						
<b>Portsmouth</b>						
One fixed red light	36 50.8	On wharf of Naval Hospital, from mast 45 ft. high, 60 ft. N. of former light-station	6a	..	6	1857
76 18.1						1878
<b>Nausemond River</b>						
One fixed red light	36 54.8	Pile lt.-ho. white with red roof, in $5\frac{1}{2}$ ft. water, at river entr. Fog-bell sounded every 7 secs.	6a	33	11	1878
76 26.5						
<b>James River</b>						
One fixed bright lt.	37 1.4	(White Shoal.) Screw pile lt.-ho. below Sandy Point. Fog-bell every 10 secs.	6a	27	9	1854
76 31.5						
<b>Point of Shoals</b>						
One fixed bright lt.	37 3.8	White screw pile lighthouse on the shoal. Fog-bell.	6a	27	9	1854
76 39.2						
<b>Deep Water Shoals</b>						
One fixed bright lt.	37 8.2	White screw pile lighthouse on the shoal. Fog-bell ev. 15 secs.	6a	27	9	1854
76 38.						
<b>Jordan's Point</b>						
One fixed bright lt.	37 18.7	White tower, 35 ft. high, on the port side going up James River. Fog-bell ev. 10 secs.	6a	35	10	1854
77 13.1						
<b>Lighthouses.</b>						

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CHESAPEAKE BAY—(continued).</b>						
Cherrystone Inlet One fixed bright lt.	37 15.6 76 1.8	White pile lighthouse on W. side of entrance of inlet, E. side of Chesapeake Bay. Fog-bell	4a	36	10	1859
Back River Fix. & fl. br. lt., 1½ m.	37 5.2 76 15.9	White tower, 30 ft. high, on South side of entrance	4b	35	10	1829
York River 1. One fixed red lt. 2. One fix. bright lt.	37 12.3 76 14.7	1. Screw pile lt.-ho., painted yellow, in 12 ft. water, at E. end of York Spit. Fog-bell ... 2. Brown, white, and red pile lt.-ho. at Toos Point Fog-bell.....	• ..	37 40	11 11	1870 1875
New Point Comfort One fixed bright lt.	37 18. 76 16.4	Stone tower, 56 ft. high, on N. side of entrance to Mobjack Bay	4a	60	13	1804
Wolf Trap Shoals One bright light, with flash every ½ min.	37 23.3 76 10.	Screw pile lighthouse on East side of shoal, between York and Rappahannock Rivers. Fog-bell ev. 15 secs .....	4a	36	11	1870
Stingray Point One fixed red light	37 33.6 76 15.9	White pile lt.-ho., in 6 ft. water, on S. side of Rappahannock River. Fog-bell at alternate intervals of 5 secs. and 30 secs.....	6a	36	7	1869
Windmill Point One fixed bright lt.	37 34.8 76 14.5	Pile lighthouse, straw colour, in 12 ft. water, on S.E. part of shoal, N. side of Rappahannock River. Fog-bell every 10 secs.....	•	34	10	1834
Watts Island One fixed & flash. lt.	37 46.9 75 53.8	White tower, 40 ft. high, on South end, East entrance to Tangier Sound. Flash every 2 minutes .....	5c	46	12	1833
<b>MARYLAND.</b>						
James Island One bright light	37 57.8 75 54.6	White pile lighthouse, off mouth of Annapolis River, Tangier Sound. Fog-bell ...	4	35	10	1867
Somers Cove One fixed bright lt.	37 58. 75 52.2	In Tangier Sound. Fog-bell ev. 15 secs.....	6a	35	10	1867
Smith Point One fixed & flash. lt.	37 53.6 76 11.4	White pile lighthouse, on S. side of entrance of Potomac. Bright lt., with red flash every 25 secs. Fog-bell .....	3c	38	11	1869
Solomon Lump One fixed light	38 2.8 76 0.5	White lt.-ho. on piles in 6 ft., opposite ent. of Potomac River. Lt. vis. from N.N.W. by the W. to E.N.E. Fog-bell, 2 strokes and 1 stroke alternately every 30 secs. ....	5a	42	11	1875
Clay Island One fixed bright lt.	38 13.9 75 58.1	N. side of entrance to Nanticoke River .....	6a	36	10	1832
Lookout Point One fixed bright lt.	38 2.3 76 19.	N. side of entrance to Potomac River. Bell <sup>4</sup> ..	4a	37	10	1831
Hooper's Strait Lighthouse destroyed	38 12.9 76 4.8	Screw pile lighthouse, in 6 ft. water, on the shoal abreast the Honga River. Fog-bell...	5a	..	8	1867
Cove Point One fixed & flash. lt.	38 23.1 76 23.6	White tower, 39 ft. high, 4 miles North of Patuxent River, on W. side of Chesapeake. Flash every 1½ minute. Fog-bell .....	4d	46	11	1828
Sharp Island One bright fixed lt.	38 37.9 76 22.3	On a screw pile lighthouse, in 7½ ft. water, off N.W. point of island. Lt. shown westward between S. by W. and E. by S. ....	5a	35	10	1866
Choptank River One bright fixed lt.	38 39.3 76 11.	Screw pile white lt.-ho., in 9 ft. water, 1½ mile S.E. of Benoni Point. Fog-bell ev. 10 secs.	6a	38	10	1871

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Miles.	Visible in Miles.	Year established.
<b>CHESAPEAKE BAY—(continued).</b>						
Thomas Point Shoal	38 54.2	White & brown pile lt.-hc. 1 mile E. by S. 4 S.	●	42	12	1875
One rev. red lt. 30 s.	76 25.7	from position of old lt. Fog-bell.....				
Greenbury Point	38 58.3	N. side of Annapolis Harbour, at entrance to	6a	50	11	1848
One fixed bright lt.	76 26.9	Severn River .....				1855
Sandy Point	39 1.1	Wh. tower, 35 ft. high, on W. side of Chesapeake. Flash every 1/2 min. Fog-bell .....	5d	50	12	1858
One fixed & flash. lt.	76 23.5					
Love Point	39 4.	A screw pile lighthouse, in 10 ft. water, at 1/2 mile N.E. from Love Point, entrance of	4b	37	10	1872
One fixed bright lt.	76 16.5	Chester River. Fog-bell every 8 secs. ....				
<b>PATAPSCO RIVER</b>						
Leading Lights for	39 11.2	Inner lt. at S. end of Hart Id.; shown only	2a	106	16	1874
Craighill Channel	76 23.3	down channel. Outer lt., iron lt.-ho., black, in 14 ft. water, near mouth of Patapsco Riv., 2 1/2 miles from inner lt. It also shows a lower	5a	30	11	1874
Two bright fix. lts.		fixed lt. at 17 ft., down the channel. The lts. in line N. 1/2 E. lead in. Fog-bell .....				
Seven-Foot Knoll	39 9.3	Black screw piles, S. side of entr. to Patapsco River. Fog-bell ev. 12 secs.....	4a	43	11	1855
One fix. red lt.	76 24.2					
Fort Carroll	39 12.8	On the fort. Fog-bell ev. 10 secs.....	5a	37	10	1854
One fix. bright lt.	76 30.8					
Hawkins Point	39 12.3	On iron piles. Lts. vertical. On shoal, on S. side of Patapsco River.....	2a	70	10	1868
Two bright fix. lts.	76 31.5			28		
Leading Point	39 12.7	Brown tower, 40 ft. high, on N. side of Baltimore Harbour. In line with Hawkins Point lights, 1/2 mile to W. by N. 1/2 N., lead up the channel .....	2a	70	14	1868
One bright fixed lt.	76 32.9					
Lazaretto Point	39 15.7	N. side of Baltimore Harbour. Fog-bell .....	4a	35	10	1831
One fixed red light	76 34.					1855
Pool Island	39 17.4	White tower, 30 ft. high, off mouth of Gunpowder River. Fog-bell ev. 12 secs.....	4a	35	10	1825
One fixed bright lt.	76 15.7					1855
<b>Susquehanna River</b>						
Turkey Point	39 26.9	White tower, 30 ft. high, on bluff point, N. side of entrance to Elk and Susquehanna Rivers .....	4a	65	12	1833
One fixed bright lt.	76 0.2					1855
Fishing Battery	39 29.6	On Fishing or Donoho's Battery .....	6a	36	10	1853
One fixed bright lt.	76 4.7					
Havre de Grace	39 32.4	Concord Point, entrance of Susquehanna River .....	6a	40	10	1825
One fixed bright lt.	76 4.8					1857
<b>POTOMAC RIVER</b>						
Piney Point	38 8.1	E. side, about 1/4 miles N.W. of mouth .....	5a	35	10	1836
One fixed bright lt.	76 31.5					1856
Blakistone Island	38 12.4	White tower, 41 ft. high, near entrance of	4a	46	11	1851
One fixed bright lt.	76 44.4	Clement Bay .....				1856
Lower Cedar Point	38 20.3	Screw pile lighthouse, in 3 ft. water, between Cedar and Yates Points. Fog-bell .....	●	35	10	1825
One fixed bright lt.	76 59.3					
Mathias Point	38 24.1	Screw piles red, lantern white, on shoal off pt. Fog Bell at Upper Cedar Point beacon. Bell	5	43	12	1876
One fix. bright lt.	77 2.3					

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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## CHESAPEAKE BAY—(continued).

## POTOMAC RIVER—(continued).

Fort Washington	38 42.7	On the wharf .....	6a   ..   6   1857
One fixed bright lt.	77 1.9		
Jones Point	38 47.4	Near Alexandria .....	5a   35   10   1855
One fixed bright lt.	77 2.1		
Bowler Rock	37 49.2	Pile lighthouse, on S. side of Rappahannock River, 26 miles above entrance. Fog-bell..	5a   35   10   1835
One fixed bright light	76 43.5		

## NORTH CAROLINA.

CURRITUCK BEACH	36 21.8	Fixed bright lt., and red flash every 1½ min.	1c   157   18   1876
One fix. & flashing lt.	75 49.3	Red brick tower, 150 ft. high.....	
BODIES ISLAND	35 49.3	Brick tower, re-built, black and white bands, 1½ mile N. of Oregon Inlet .....	1a   156   18   1872
One fixed bright light	75 33.4		
CAFE HATTERAS	35 15.1	1. Tower, 180 ft. high, black and white spiral bands, about 2 miles N. of cape. Dangerous shoals 9 or 10 miles to S.E.	1b   185   22   1798
1. One flashing br. lt., 10 secs.	75 31.	2. Beacon light on red frame, 500 yds. from extremity of point.....	
2. One fixed bright lt.			6a   25   9   1857

## PAMPLICO SOUND

Oliver Reef	.....	Pile lt.-ho. in 7 ft. water, on reef, Hatteras Inlet, Pamlico Sound. Fog-bell 8 secs. ...	4b   36   11   1874
One red flash. lt. 30 s.			
Ocracoke Island	35 6.5	White tower, 65 ft. high, on W. end of island, N. side of entrance to the inlet.....	4a   75   15   1823
One fixed bright lt.	75 58.9		
Royal Shoal, S.W. Pt.	35 7.	White screw piles, in 7 ft. water, on S.W. point .....	4a   38   10   1826
One fixed bright lt.	76 7.		
Royal Shoal, N.W. Pt.	35 9.2	White screw piles, in 6 ft. water, on N.W. point. Flash every 1½ min. Fog-bell .....	4d   33   10   1857
One fixed & flash. lt.	76 9.2		
Harbour Island	35 0.5	White screw piles on bar, between Pamlico and Core Sounds. Fog-bell .....	5a   34   10   1836
One bright fixed lt.	76 13.		
Brant Island Shoal	35 8.1	Pile lt.-ho. in 7 ft., on S.E. pt. of shoal, in S. pt. of Pamlico Sound. Fog-bell ev. 20 secs....	5a   ..   ..   1851
One fixed bright lt.	76 17.3		
Neuse River	35 5.3	Pile lighthouse, in 5 ft. water, off Marsh Point, W. side of entrance to Neuse River. Fog-bell .....	5a   38   11   1828
One bright fixed lt.	76 32.6		
Pamlico Point	35 19.4	White tower, 34 ft. high, on S. side of entrance to Pamlico River .....	5a   37   11   1828
One fixed bright lt.	76 31.3		
Long Shoal	35 34.	White pile lighthouse, on E. point of shoal, in 9 ft. water. Fog-bell .....	4a   35   10   1834
One bright fixed lt.	75 42.		
Roanoke Marshes	35 48.5	White pile lighthouse, in 9 ft. water, on E. side of channel, between Pamlico and Croatan Sounds. Fog-bell .....	4a   33   11   1824
One fixed red light	75 41.8		
Croatan	35 57.6	White screw piles, between Croatan and Albemarle Sounds. Fog-bell every 15 secs.	4a   35   10   1835
One fixed bright lt.	75 47.4		
Wade's Point	36 9.1	White pile lighthouse, on end of shoal, West side of Pasquotank River, Albemarle Sound. Fog-bell .....	5a   31   10   1854
One fixed bright lt.	75 58.3		
North River	36 9.3	On screw piles, in 3½ ft. water, on bar of Albemarle Sound. Fog-bell .....	5a   35   10   1866
One fixed red light	75 53.5		
Roanoke River	35 56.8	White screw piles, in 7½ feet water, near entrance. Fog-bell ev. 5 secs .....	4a   35   10   1835
One fixed bright lt.	76 41.4		

Name and Character of Light.	Lat. N. Long. W. • ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CAPE LOOKOUT</b> One fixed bright light	34 37.3 76 31.1	Tower, 150 ft. high, chequered black and white, near end of cape. The old tower is painted in red and white horizontal bands. Lt. shown to eastward from N.N.E. to W.N.W. Dangerous shoals extend 11 miles to S.S.E. from the lt.	1a	150	22	1812 1859
<b>Federal Point</b> One fixed bright light	33 57.6 77 55.2	White tower, 45 ft. high, on N. side of inlet. N. of entrance of Cape Fear River .....	4a	60	12	1816 1866
<b>Fryingpan Shoals Lt.-V.</b> Two fixed bright lts.	33 35. 77 50.	Painted yellow; schooner-rigged. In 10 fms., 1 mile from outer shoal. Fog-bell and horn	●	40	12	1854
<b>CAPE FEAR RIVER</b>						
<b>Oak Island</b> Two fixed bright lts.	33 53.4 78 1.6	On E. end of island, 3 miles below Wilmington. In one, N. $\frac{1}{2}$ E., 267 yds. apart, lead over the bar .....	6a 4a	33 45	9	1849 1866
<b>Price's Creek</b>	33 56.1 77 59.2	Light uncertain .....	...	...	...	....
<b>Campbell's, or Big Id.</b>	34 6.9 77 56.	Light uncertain .....	...	...	...	....
<b>Orton's Point</b>	34 3.4 77 56.2	Light uncertain .....	...	...	...	....
<b>Upper Jetty Range</b>	34 12.8 77 56.3	Light uncertain .....	...	...	...	....
<b>SOUTH CAROLINA.</b>						
<b>Georgetown</b> One fixed bright light	33 13.4 79 10.9	White tower, 82 ft. high, at East side of entrance to Pedee River .....	4a	86	15	1801 1867
<b>CAPE ROMAIN</b> One rev. br. lt., 1 min.	33 1.1 79 22.2	On Raccoon Key. New red brick tower, 150 ft. high. Old tower, 65 ft. high, and white-washed, stands near. Shoals extend 6 miles beyond the cape .....	1b	154	20	1827 1866
<b>Bull's Bay</b> One fixed bright light	32 55.3 79 33.7	Red brick house on N. end of island .....	4a	35	11	1852
<b>Rattlesnake Shoals Lt.-V.</b> Two fixed bright lights	32 44.1 79 43.6	White hull; two masts; in $5\frac{1}{2}$ fathoms, with Fort Sumter W. $\frac{1}{2}$ N., and red beacon on Morris Island W. by S. $\frac{1}{2}$ S. Fog-horn and bell .....	●	44	12	1854
<b>CHARLESTON HARBOUR</b>						
<b>Morris Island</b> 1. One fixed br. lt. 2. Two red fixed lts.	32 41.9 79 52.5	1. Tower, 150 ft. high, painted in black and white bands; near South end of Morris Id. Cata-dioptric light .. 2. Two beacons on S. end of island; E. tower, red; West, black. Two lts. in one, 360 yds. apart, bearing W. by N. $\frac{1}{2}$ N., lead over the bar into the main ship channel, which is shifting to the southward .....	1 5a 5a	152 20 40	18 7 9	1876 1870

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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## CHARLESTON HARBOUR—(continued).

Sullivans Island Two fixed red lights	32 47. 79 51.	One on N.E. bastion of Fort Moultrie; the other by the cove, 300 yds. to northward. In one, lead through main ship channel.....	5a 5a	57 34	10 10	1848 1:72
Fort Sumter One fixed bright light	32 45.1 79 52.3	On the fort, on West side of entrance.....	5a	57	10	1855 1866
Fort Ripley Shoal One fixed red light	32 45.8 79 54.	Pile lt.-ho., painted yellow, in 8 ft. water .....	..	48	12	1878
ST. HELENA SOUND One rev. br. lt., $\frac{1}{2}$ min.	32 23. 80 25.	Lt.-ho. white to top of foliage, black above, on Hunting Id., S. side of entr. to Sound ...	2b	132	17	1875
Martin's Industry Lt.-V. Two fixed bright lights.	32 5.5 80 35.2	Painted red, schooner-rigged, at 15 miles eastward of Tybee light. Fog-horn and bell ...	●	44	12	1839 1855

## GEORGIA.

## SAVANNAH RIVER

Danfuskie Island Two fixed bright lts.	.....	High lt. N. & W., 750 yds. from low lt. Leading lts. for channel, from Tybee Roads into Calibogue Sound.....	5a 5a	61 18	..	1873 ....
TYBEE ISLAND Two fixed bright lts.	32 1.3 80 50.5	Main light, a white tower, 134 ft. high, on N.E. end of the island, S. side of entrance to Savannah River; beacon light on a white tower, 50 ft. high, on N.E. extreme of island, $\frac{1}{2}$ of a mile E. of main light .....	1a 4a	150 65	20 12	1793 1822
Tybee Knoll Lt.-Ves. One fixed bright lt.	.....	Painted red, on knoll, $1\frac{1}{2}$ mile W.N.W. of main light. Fog-bell and horn.....	●	40	10	1848 1857
Cockspur Island One fixed bright lt.	32 1.4 80 52.6	On a knoll, off E. end of the island .....	6a	25	9	1849 1856
Tybee Knoll Beacons Two bright fix. leading lights	32 2. 80 54.3	At E. end of Long Island. Beacons painted white. In line, W. $\frac{1}{2}$ S. 717 yds. apart, lead through dredged channel from Tybee Road into Savannah River .....	6a 6a	44 21	..	1878 1878
Oyster Beds One fixed red light	32 2.3 80 53.5	Opposite Cockspur Island, to mark South channel. Fog-bell.....	6a	35	9	1849 1856
Fig Island One fixed bright lt.	32 4.9 81 3.6	On E. end of island, in Savannah River. Fog-bell .....	6a	26	9	1848 1856
SAPELO ISLAND 1. One fixed & flash. lt. 2. One fixed bright lt.	31 23.5 81 16.9	1. Tower, 70 ft. high, red and white horizontal bands, S. end of island, N. side of Doboy Sound. Flash every 45 seconds .. 2. Fixed light in front or seaward of former...	4c 6a	79 50	14 11	1820 1854 1858
Wolf Island Two fixed bright lts.	31 21.1 81 16.5	White towers, 38 and 30 ft. high, near N. end of island, S. side of Doboy Sound .....	6a ..	38 30	10	1822 1856
ST. SIMON'S ISLAND One fix. and flashing lt.	31 8. 81 23.4	White tower, 100 ft. high, on N. side of Sound. Bright fixed light, with alternate red and bright flashes every minute .....	..	..	..	1811 1872
LITTLE CUMBERLAND ISLAND One fixed bright light	30 58.6 81 24.6	White tower, 61 ft. high, on S. side of entrance to St. Andrew Sound and Santilla River ...	3a	78	14	1838 1866

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus		Visible in Miles.	Year established
			Height above H. W.	Year established		
<b>FLORIDA.</b>						
<b>AMELIA ISLAND</b>						
1. Fix. & fl. br. lt. $1\frac{1}{2}$ m.	30 40.4 81 26.3	1. White tower, 58 ft. high, 2 miles from N. end of island .....	3b	112	16	1839
2. One fixed bright lt.		2. From black beacon, 1,200 yds. N.E. of main lt. In one, S.W., lead over bar until N. Range lts. come in line.....	6a	27	10	1868
<b>North Range Beacons</b>	30 42.2 81 26.4	On N. end of Amelia Id. High tower white, 40 ft. high; low tower brown, 25 ft. high ...	6a	35	11	1872
Two fixed bright lts.			6a	53	12	1872
<b>ST. JOHN'S RIVER</b>						
1. One fixed bri. ht lt.	30 23.7 81 24.7	1. Red tower, 74 feet high, on South side of entrance to Jacksonville .....	3a	84	14	1829
2. One fixed bright lt.		2. Screw pile lightho., in 6 ft. water, off Dames Point; pass on either side .....	5a	36	10	1872
<b>ST. AUGUSTINE</b>						
One fixed lt., with flash every 3 minutes	29 53. 81 17.	A new lighthouse near old one, painted in black and white spiral bands, 150 ft. high, on N. end of Anastasia Id., S. side of entr.	1c	160	19	1874
<b>CAPE CANAVERAL</b>						
One br. rev. lt., 1 min.	28 27. 80 33.	New iron tower, 55 ft. high, black and white belts, on N.E. pitch of cape. Dangerous shoals lie from 6 to $1\frac{1}{2}$ miles to north-eastward from the cape .....	1b	139	18	1847
						1868
<b>JUPITER INLET</b>						
One fix. & flash. br. lt.	26 55.4 80 5.1	Red brick tower, 94 ft. high, between the inlet and Gilbert Bar. Fixed lt., with flash every $\frac{1}{2}$ min. ....	1c	146	18	1860
<b>CAPE FLORIDA (Fowey Rocks)</b>						
One fixed bright light	25 35.3 80 5.8	Iron lt.-ho., painted brown, in 5 ft. water, 80 yds. S. of beacon P. Keeper's dwelling white. Catadioptric (reflector and lens) of the first order .....	..	110	16	1878
<b>CARYSFORT REEF</b>						
One rev. br. lt., $\frac{1}{2}$ min.	25 13.3 80 12.7	Iron piles, 112 ft. high, dark brown colour, on the reef .....	1b	106	18	1852
						1857
<b>ALLIGATOR REEF</b>						
One flashing lt., 5 secs.	24 51. 80 37.	White iron framework and dwelling, in 5 ft. water, near N.E. point of reef. Five bright flashes, then one red.....	1b	143	18	1873
<b>SOMBREDO SHOAL</b>						
One fixed bright light	24 37.6 81 6.7	Edge of the shoal, pile lt.-ho., dark colour, 149 feet high, near Coffin Patches and Sombrero Key.....	1a	144	18	1857
<b>SAND KEY</b>						
One fixed and flash. lt.	24 27.2 81 53.7	Dark tower, 131 ft. high, on a small islet, $7\frac{1}{2}$ miles S.W. of Key West light. Fixed lt., with flash every 2 minutes .....	1c	110	18	1826
						1853
<b>KEY WEST</b>						
<b>S.W. Point of Island</b>						
One fixed bright lt.	24 33. 81 48.1	White tower, 55 ft. high, $\frac{1}{2}$ a mile inland .....	3a	70	13	1825
						1868
<b>N.W. Passage</b>						
One fixed bright lt.	24 37.1 81 54.1	On iron screw piles, in 6 ft., on N.E. point of reef, $\frac{5}{8}$ miles N.W. by W. from Key West .....	4a	40	12	1838
						1854
<b>DRY TORTUGAS</b>						
<b>LOGGERHEAD KEY</b>						
One fixed bright lt.	24 38.2 82 55.7	Round tower, 150 ft. high, upper part black, lower white, on centre of W. Key .....	1a	152	20	1858
<b>Garden or Bush Key</b>						
One fixed bright lt.	24 37.8 82 52.9	Brown tower, 65 ft. high, on Fort Jefferson ...	4a	70	14	1825
						1868

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>EGMONT KEY</b> One fixed bright light	27 36. 82 46.2	White tower, 81 ft. high, on the Key, at entrance of Tampa Bay .....	4a	86	15	1848 1857
<b>CEDAR KEYS</b> One fixed and flash. lt.	29 5.8 83 4.8	White tower, 43 ft. high, on S.E. point of Seahorse Key. Flash every minute. A reef extends 12 miles to S.W. ....	4d	75	15	1854
<b>ST. MARK'S HARBOUR</b> One fixed bright light	30 4.4 84 10.6	White tower on East side of entrance .....	4a	73	14	1829 1856
<b>DOG ISLAND</b>	29 46 8 84 38.6	White tower, 44 ft. high, on East side of middle entrance of St. George's Sound .... Destroyed by hurricane in 1873	4b	48	13	1838 1856
<b>CAPE ST. GEORGE</b> One fixed bright light	29 35.2 85 2.7	White tower, 70 ft. high, on the cape.....	3a	77	15	1847 1857
<b>CAPE ST. BLAS</b> One rev. br. lt., 1½ min.	29 39.8 85 21.6	White tower, 96 ft. high, 2 miles from South point of cape. Dangerous shoals extend 6 miles to S.S.W. ....	3b	96	16	1847 1858
<b>PENSACOLA</b> 1. One rev. br. lt., 1 m. 2. One bright fixed lt.	30 20.8 87 18.4	1. Black and white tower, 160 ft. high, near Barrancas, S. side of Pensacola Bar .. 2. Bar beacon, white, 150 yds. to S.S.E. & E. from main lt. In one, N.N.W. & W., lead over the bar.....	1b	210	21	1824 1869
			..	..	4	1859

**ALABAMA.****MOBILE BAY**

<b>SAND ISLAND</b> One bright fixed lt.	30 11.3 88 1.9	New brick tower, painted black, 140 ft. high, on a low island, 3 miles S.S.W. of Mobile Point .....	2a	132	17	1864 1873
<b>Mobile Point</b> One fixed red light	30 13.7 88 1.5	New tower, 37 feet high, painted black, on S.W. bastion of Fort Morgan, E. side of bay	4a	50	10	1864 1873
<b>Choctaw Point</b> One fixed bright lt.	30 40.2 88 1.1	Screw pile lighthouse, in 7 ft. water, ½ of a mile E. of the point. Fog-bell .....	4a	46	12	1872

**MISSISSIPPI AND LOUISIANA.****MISSISSIPPI SOUND**

<b>Horn Island</b> Bright fixed lt., red flash every min.	30 13.5 88 30.0	Pile lighthouse on E. end of island, Mississippi Sound. Fog-bell struck every ¼ minute ...	4c	42	12	1874
<b>Round Island</b> One fixed bright lt.	30 17.5 88 34.2	White tower, 45 ft. high, on island off Pascagoula Bay. Hidden by woods to northward between N.W. by N. & N.E. by E. & E.	4a	51	12	1833 1856
<b>East Pascagoula River</b> One fixed bright lt.	30 21.1 88 33.1	At East Pascagoula .....	5a	35	10	1854
<b>Ship Island</b> One fixed red lt.	30 12.9 88 57.	White tower, 48 ft. high, on W. end of island	4a	51	13	1853
<b>Biloxi</b> One fixed bright lt.	30 23.7 88 53.1	White iron tower, 48 ft. high, at W. entrance to bay.....	4a	62	13	1848 1856

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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**MISSISSIPPI SOUND—(continued).**

Cat Island One fixed & flash. lt.	30 14.0 89 8.7	Screw pile lighthouse, on W. end of island. Flash every 1/4 minute .....	5a	45	11	1871
Pass Christian One fixed bright lt.	30 18.7 89 14.	White tower, 30 ft. high, on mainland, 6½ miles N.W. of Cat Island light.....	4a	42	12	1831
Merrill: Shell Bank One fixed bright lt.	30 14.3 89 14.5	A pile lighthouse, between Cat Island and Grand Island. Fog-bell and horn .....	4a	45	11	1860
St. Joseph's Island One bright fixed lt.	30 11.1 89 24.6	White, on brick pier, 34 ft. high, at entrance to Lake Borgne .....	5a	35	9	1865
Proctorsville One fixed bright light	29 52.4 89 39.5	Near fort at Proctorsville, Lake Borgne.....	6a	39	10	1850
						1858

**LAKE PONTCHARTRAIN**

West Bigelets One fixed bright lt.	30 10.6 89 43.6	At East entrance of Lake Pontchartrain .....	5a	30	10	1855
Herbes Point One fixed red light	30 9.5 89 51.5	Near extr. of point, on keepers' dwelling. Lt. shown northw. betw. S.W. & W. & S.E. & E.	5a	40	11	1875
Port Pontchartrain One fixed & flash. lt.	30 1.8 90 2.7	White house near E. end of railroad. Flash every 1/4 minute .....	6a	35	10	1838
						1855
Bayou St. John One bright fixed lt.	30 1.9 90 4.	Screw pile lighthouse, 5 miles North of New Orleans .....	6a	39	10	1811
						1855
New Canal One bright fixed lt.	30 1.7 90 5.8	At the entrance of the canal .....	5a	33	10	1838
Tchefuncte River One bright fixed lt.	30 23. 90 6.	Near Madisonville .....	5a	38	10	1837
Manchac Pass One bright fixed lt.	30 17.8 90 12.7	On S. side of Pass, between Lakes Maurepas and Pontchartrain .....	5a	45	12	1838
						1857

CHANDELEUR ISLAND	30 3.1 88 51.6	White tower, 50 ft. high, on N. end. Good anchorage inside the point, with the light bearing N.E. about 2 miles.....	4a	50	13	1848
						1855

**MOUTHS OF MISSISSIPPI**

PASS A L'OUTRE One fixed & flashing bright light	29 11.5 89 1.5	Black tower, 69 ft. high, on Middle Ground Island, N. side of entrance. Flash every 45 seconds. Steam Fog-whistle .....	3a	77	15	1855
						1858
SOUTH PASS One rev. br. lt. 1½ m.	29 1. 89 10.	Wood tower, slate coloured, 54 ft. high, on Gordon Id., S.W. side of Pass. Whistle-buoy in 10 fms., S.E. of lt.—ho. Pass disused. Lt.—ho. not to be approached nearer than 4 miles	3b	60	13	1831
						1858
Deer Island One fixed bright lt.	29 8.6 89 15.1	At junction of S.W. & N.E. Passes. Fog-bell, 2 blows and 1 blow every 10 and 20 secs. ...	5a	..	5	1852
SOUTH-WEST PASS One fixed bright lt.	28 58.5 89 23.5	New black tower, ½ mile S. by W. & W. from former lt.—tower, on W. side of entr. of river. Steam Fog-whistle, 2 blasts every min. .....	1a	128	17	1831
						1873

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BARRATARIA BAY</b> One fixed bright light	29 16.2 89 55.	White tower, 55 ft. high, on West end of Grande Terre Island.....	4a	60	13	1864
<b>TIMBALLIER ISLAND</b> Bright fix. lt., with red flash every minute	29 1. 90 18.	Screw pile lighthouse, in 7 ft. water, painted black	2c	110	16	1875
<b>SHIP ISLAND SHOAL</b> One fixed and flash. lt.	28 55. 91 4.	Black iron pile lighthouse, 125 ft. high, off Raccoon Point. Fixed lt., with flash every 8 min. Fog-bell .....	2d	110	17	1860
<b>SOUTH-WEST REEF</b> One fixed light	29 25. 91 30.	Iron piles, black, on reef, at entr. of Atchafala- laya Bay. Fog-whistle 10 secs. ev. 30 secs.	4a	49	12	1859
<b>Calcasieu River</b> One fixed bright light	29 46. 93 17.5	White pile lt.-ho. on E. pt. of entr. to river...	4	55	13	1876
<b>SABINE PASS</b> One fixed and flash. lt.	29 43.9 93 50.3	White tower, 75 ft. high, on Brant Point, E. side of river. Flash every 1½ minute.....	3d	85	16	1856

## TEXAS.

## GALVESTON BAY

<b>Lightvessel</b> One bright fixed lt.	.....	Painted straw colour. In 4½ fathoms inside the bar. Fog-bell and horn .....	..	47	11	1849
<b>BOLIVAR POINT</b> One fixed bright lt.	29 22. 94 45.5	New iron tower, black and white horizontal bands, ½ a mile W.S.W. from former light- house. North side of entrance to Galveston	3a	117	17	1872
<b>Half-moon Shoal</b> One fixed bright lt.	29 24. 94 50.6	Iron piles, white and red corners; between Pelican Island and Dollar Point. Fog-bell	6a	34	6	1854
<b>Red Fish Bar</b> One fixed bright lt.	29 30.8 94 51.7	Building white and bl. lantern To mark channel across Red Fish Bar. Fog-bell ...	6a	35	10	1854
<b>Cloppers Bar</b> One bright fixed lt.	29 41.2 94 56.5	White building, to mark the channel. Fog- bell .....	6a	35	10	1854

## MATAGORDA BAY

<b>Matagorda Island</b> One rev. br. lt., 1½ m.	28 21. 96 25.9	White wooden tower, on E. point of island, at entrance to Matagorda Bay .....	5b	35	10	1852
<b>West Shoal</b> One fixed bright lt.	28 25. 96 22.	White screw pile lighthouse, inside Deerows Point. On port side going in through the Swash Channel. Fog-bell every 10 secs. ...	4a	35	11	1873
<b>East Shoal</b> One fixed red light	28 25.5 96 22.	White screw pile lighthouse. On starboard side going in through the Swash Channel...	4a	35	11	1872
<b>Half Moon Reef</b> One fixed red light	28 33. 96 15.5	Pile lighthouse, on S. extremity of reef. Fog- horn every 5 minutes .....	6a	35	11	1858
<b>Swash</b>	28 26.5 96 22.5	Screw pile lighthouse opposite Alligator Head. Fog-horn every 5 minutes .....	5a	38	6	1858

## ARANSAS PASS

One fixed bright light	27 52.4 97 3.	Brown tower, 55 ft. high, on Low Island, inside the Pass. Seen outside when bearing N.W. ½ W. .....	4a	60	13	1855
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## BRAZOS SANTIAGO

<b>Padre Island</b> One fixed bright lt.	26 4. 97 9.	Square white tower, 28 ft. high, on S. side of entrance to Brazos Santiago .....	5a	35	10	1852
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<b>ISABEL POINT</b> One fixed & flash. lt.	26 4.9 97 11.1	White tower, 57 ft. high, on the point. Flash every minute .....	3d	82	16	1852
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Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>WEST INDIES.</b>						
<b>BAHAMA ISLANDS (BRITISH).</b>						
<b>ABACO</b> One rev. br. lt., 1 min.	25 51.3 77 11.2	White and red tower, 85 ft. high, on S.E. point, or Hole-in-the-Wall.....	•	160	16	1848
<b>Little Guana, or Elbow Cay</b> One fixed bright lt.	26 30.5 76 58.2	Circular stone tower, 77 ft. high, $\frac{2}{3}$ of a mile inland.....	1a	190	18	1863
<b>GREAT STIRRUP CAY</b> One fixed bright light	25 49.7 77 53.9	Stone tower, 46 ft. high, white, with two red bands. Shown northward from S.E. by E. to S.W. ....	3a	81	14	1863
<b>NASSAU HARBOUR</b> 1. One fixed bright lt. 2. One fixed bright lt.	25 5.6 77 22.4	1. Stone tower, 58 ft. high, on W. pt. of Hog Id. Shown northward A red lt. is shown from a flagstaff near the lighthouse when Nassau Bar is impassable 2. On Athol Id., E. of Hog Id., from cupola of Quarantine Office. Lt. vis. betw. E. by S. & S. and S.S.E. & E. ....	•	68	10	1816 1847
<b>GREAT ISAAC</b> One rev. br. lt., $\frac{1}{2}$ min.	26 2. 79 6.5	Tower, 145 ft. high, with red and white bands, on island, at N.W. end of Great Bahama Bank .....	•	158	16	1859
<b>GUN CAY</b> One rev. red lt., $1\frac{1}{2}$ min.	25 34.6 79 18.8	Tower, 70 ft. high, upper part red, lower white, near S. point. Hidden by Bemini Islands, 8 miles to N., or from N. by E. & E. to N. & W. ....	..	80	12	1836 1873
<b>CAY SAL BANK</b> One fixed bright light	23 56. 80 28.5	Tower, 58 feet high, lower part red, upper white, on North elbow, or Plancuata Cay. Hidden by Water Cay, 9 miles to N.E. & E. ....	..	96	14	1839
<b>Anguila</b> <i>Proposed</i>	23 29. 79 32.	Fixed and flashing light proposed on S.E. cay	4d	..	..	....
<b>CAY LOBOS</b> One fixed bright light	22 22.5 77 35.1	Iron tower, 130 ft. high, with black and white bands, on cay, N. side of Old Bahama Chan.	1a	146	16	1860
<b>CROOKED ISLAND PASSAGE</b>						
Bird Rock One rev. br. lt., $1\frac{1}{2}$ m.	22 50.7 74 22.5	Stone tower, 112 ft. high, off N.W. part of Crooked Id. Rocks extend N. by W. $\frac{1}{2}$ W. 1 mile from lighthouse.....	2b	120	17	1876
Castle Island One bright fixed lt.	22 6.7 74 20.7	Tower, 114 ft. high, white, with 3 red bands, $\frac{1}{4}$ of a mile within S.W. part of Castle Id. ....	2a	123	17	1868
<b>GREAT INAGUA ID.</b> One br. rev. lt., 1 min.	20 56. 73 40.8	Tower, 114 ft. high, white and red bands, 2 miles N.W. from S.W. point .....	2b	120	17	1870
<b>TURKS ISLAND</b> One br. revol. $1\frac{1}{2}$ , $\frac{1}{2}$ m.	21 31. 71 7.7	White iron tower, 60 ft. high, at 400 yards within N. end of the island.....	•	108	15	1852
<b>CUBA (SPANISH).</b>						
<b>ST. IAGO DE CUBA</b> One rev. br. lt., 2 min.	19 57.7 75 54.3	White iron tower, 20 ft. high, to E. of Mora Castle.....	4b	223	20	1842
<b>CAPE CRUZ</b> One fixed & flashing lt.	19 50.2 77 44.5	Stone tower on the cape. Red flash ev. 3 min.	2c	114	15	1871
<b>XAGUA, or CLENFUEGOS</b> One fix. & flash. br. lt., 2 min.	22 1.2 80 30.3	Villa Nueva Tower, 45 ft. high, on Colorado Point, E. of entrance.....	3b	81	14	1861

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above ll. W.	Visible in Miles.	Year established
Piedras Cay One fixed bright light	21 57.8 81 3.3	Brown tower, 26 ft. high, on N. part of cay. Guide to Cochinos Bay.....	4a	30	7	1863
Batabano One fixed bright light	22 41.4 82 18.3	Lantern, on a mast .....	..	31	3	1847
Isle of Pines <i>Proposed</i>	21 26. 83 6.	Proposed revolving light on Cape Pepe .....	2b	111	16	....
CAPE SAN ANTONIO One rev. br. lt., $\frac{1}{2}$ min.	21 51.8 84 58.1	Roncalli Tower, 107 ft. high, on the cape, W. point of Cuba .....	2b	107	20	1850
Jutias <i>Proposed</i>	22 43.3 84 6.5	Proposed fixed and flashing light.....	2b	..	..	....
Gobernadora <i>Proposed</i>	23 0. 83 13.2	Proposed revolving bright light on the point .....	2b	..	..	....
HAVANA One rev. br. lt. $\frac{1}{2}$ min.	23 9.3 82 22.1	O'Donnell tower, 79 ft. high, on Moro Castle, E. side of entrance.....	1c	170	21	1847
Guanos <i>Proposed</i>	23 9. 81 42.	Proposed revolving bright light .....	3b	..	..	....
<b>CARDENAS BAY</b>						
Piedras Cay One fixed & flash. lt.	23 14.4 81 7.3	White tower, 67 ft. high. A red flash every 3 minutes .....	4d	74	10	1857
Cayo Diana One fixed bright lt.	23 9.9 81 7.	On an iron column.....	..	43	7	1862
Cruz del Padre One bright fixed light	23 17.1 80 54.2	White tower, 46 ft. high, on reef, $\frac{1}{2}$ mile N.E. from the cay. Reported to show a red flash for 10 secs., br. flash 30 secs., and dark 20 secs. in ev. min. ....	4a	49	10	1862
BAHIA DE CADIZ One rev. br. lt., 1 min.	23 12.6 80 29.3	White iron tower, 159 ft. high, on N.E. part of the cay.....	1c	175	24	1862
Port Sagua la Grande One fixed bright light	23 4. 80 4.	From a mast above a house, on N.W. point of Hicacal Cay, E. side of entrance .....	a	55	8	1872
CAY PAREDONE GRANDE One br. fix. & flash. lt.	22 29.4 78 9.7	White iron tower, 128 ft. high, on N. part. Flash every minute .....	1c	159	20	1859
<b>NUEVITAS HARBOUR</b>						
MATERNILLOS POINT One fix. & flash. br. lt.	21 40.2 77 8.9	Colon tower, 170 ft. high. Flash every minute	1b	174	23	1848
Barlovento, or E. Point One bright fixed lt.	21 37.5 77 5.3	On a mast above a yellow house .....	6a	49	9	1864
LUCRETIA POINT One rev. red lt., 1 min.	21 4.6 75 37.9	Stone tower, on N.E. coast of Cuba.....	2b	112	10	1868
Baraicos One bright fixed light	20 21.7 74 30.3	On an iron column above keeper's house .....	a	48	12	1870
CAPE MAYSI One fixed bright light	20 15.1 74 10.3	Round tower on the cape, East extreme of Cuba .....	2a	128	17	1862

Name and Character of Light.	Lat. N. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles	Year established.
<b>JAMAICA (English).</b>						
<b>MORANT POINT</b> One rev. br. lt., 1 min.	17 56. 76 11.7	White iron tower, 86 ft. high, on E. extreme of Jamaica. Visible only betw. S.S.W. & W. and N.W. by N.....	..	115	15	1842
<b>KINGSTON</b>						
<b>Plum Point</b> One fixed red or br. lt.	17 55.7 76 47.	White tower to N. of the point. Shows red from S.E. by E. & E. southward, to S. & W.; thence bright over the shoals in the West part of Port Royal Bay up to N.W. ....	..	68	12	1864
<b>Fort Augusta</b> One fixed red or br. lt.	17 57. 76 53.	A lamp on the beacon. Light is red to East; bright to S. and W. Bearing N. by E. it leads through South Channel.....	..	40	...	....
<b>HAITI OR SANTO DOMINGO</b>						
<b>SANTO DOMINGO</b> One fixed bright lt.	18 28.1 69 52.5	Tower, 100 ft. high, on San José Fort. No lts. in Haiti to be depended on.....	..	113	9	1853
<b>Jacmel Bay</b> One red fixed light	18 12. 72 34.	On summit of white cliff (Uncertain) .....	..	...	12	1867
<b>PUERTO RICO</b> Fix. & flashing br. lt.	18 28.7 66 6.6	White iron tower on upper battery of Morro Castle. Fix. lt. with flash of 5 secs. ev. min.	3c	171	18	1846
<b>Mayaguez Bay</b>	.....	Two red leading lights on mole head .....	..	...	...	1876
<b>SANTA CRUZ, or ST. CROIX ISLAND</b>						
<b>Frederichstæd</b> One fixed bright lt.	17 42.7 64 52.7	Danish.] On Fort Frederichstæd .....	..	..	4	1857
<b>Christiansted</b> One bright fixed light	17 45.4 64 41.5	On Louisa Augusta Fort .....	..	..	5	....
<b>ST. THOMAS</b> One fixed bright light	18 19.4 64 55.1	Danish.] On E. side of entrance, on Myhlenfelts Point. Visible from N. by E. by the West to E. by S.....	..	95	12	1844
<b>SOMBRERO ISLAND</b> One br. rev. lt., 1 min.	18 35.7 63 27.8	British.] Iron framework lighthouse, red, 132 feet high, on S.E. side of the island, $\frac{1}{2}$ of its length from S. end.....	2b	150	20	1868
<b>St. Martin Island</b> One fixed bright light	.....	(Dutch.) Small lt. on old Fort Amsterdam, W. side of Grande Bay .....	..	150	8	1875
<b>St. Christopher</b> One fixed red light	17 18. 62 42.8	British.] On the beach at Basse Terre .....	..	37	6	1846
<b>Montserrat</b> One fixed light	16 42.2 62 13.	British.] Fixed lantern lt. for mail steamers, on the beach at Plymouth .....	..	..	..	....
<b>Antigua</b>						
<b>English Harbour</b> Two br., one red lt.	17 0. 61 45.3	British.] Fixed triangularly; upper lt. red, for mail steamers .....	..	62	8	1843
<b>St. John Harbour</b> One fixed bright lt.	17 6.8 61 54.5	Black wooden lt.-ho., 53 ft. high, on Sandy Id., off St. John Harbour .....	●	56	13	1875
<b>Mariegalante</b> One bright fixed light	15 54. 61 17.	(French) .....	..	..	9	1867

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
<b>GUADALOUPE (French)</b>						
Basse Terre Mole	16 0.2	On the mole. Also red lt. on end of wharf ...	...	..   ..   2	1865	
One red fixed light	61 44.8				1870	
Moule de Port	16 20.	Lamp light.....	...	..   ..   7	1868	
One fixed bright lt.	61 21.					
Pointe à Pitre	16 13.5	Lantern, South of town. Lights on buoys when mail steamer is expected.....	...	..   ..   ..   ....		
One fixed light	61 29.5					
Manroux Islet	16 13.3	Lantern light .....	...	..   ..   ..   ....		
One fixed light	61 31.5					
Gozier Islet	16 11.1	.....	...	..   ..   ..   ....		
One fixed bright lt.	61 29.					
PETITE TERRE	16 10.5	Tower, 75 ft. high, near eastern part .....	3a   108   15   ....			
One fixed bright lt.	61 5.1					
Dominica	15 17.4	British.] On mole, on Roseau Point, for mail steamers .....	..   ..   ..	1867		
One red light	61 23.1					
<b>MARTINIQUE (French)</b>						
Caravelle Peninsula	14 46.2	A white tower on Caracol Mount, $\frac{1}{2}$ of a mile inland of N.E. extreme of island .....	1a   410   25	1862		
One fixed bright lt.	60 52.9					
Pointe des Negres	14 36.	On a red mast, on the fort .....	..   ..   62   11	1855		
One bright fixed lt.	61 5.5					
Fort St. Louis	14 36.1	In S.W. part of fort. Lights on buoys when mail steamer is expected.....	..   131   6   ....			
One red fixed light	61 4.2					
Ste. Marthe Point	14 44.1	Red lt. to clear Milan. West lt. orange to N., green to S., blue to W. The white and blue lts. in line lead to the anchorage .....	..   ..   5	1860		
One red, one coloured light	61 10.7					
St. Pierre Bay	.....	Light on the edge of the bank, for mail steamers .....	..   ..   ..	1860		
<b>ST. LUCIA</b>						
Castries	14 1.5	British.] Red lt. on Tapion Battery, South entrance of Castries Harbour; lt. for mail steamers. Red lt. on Vieille Ville Shoal;	..   80   3	1843		
One fixed red light	61 0.1	green lt. on Cocoa-nut Shoal .....			1868	
One red, one green lt.						
St. Vincent	13 10.	British.] On Fort Charlotte.	..   640   6	1858		
One fixed bright light	61 15.					
Grenada	.....	From Fort George flagstaff, St. George Har- bour, when mail steamer is expected .....	..   ..   3	1876		
One fixed bright light						
TRINIDAD	10 38.7	British.] In Port Espana. Hexagonal tower, 45 ft. high, on the jetty. Shown seaward from S.W. to N.W. .....	4a   50   15	1841		
One fixed bright light	61 31.9					
Icacos Point	.....	From a mast on S.W. point of Trinidad.....	..   39   5	1870		
One bright fixed lt.						
TOBAGO	11 10.	British.] At Scarborough. Pentagonal tower, 57 ft. high, red and white, on Bacicot, or Red Point. Leading lts. on two white be- acons when mail steamer is expected.....	a   128   12	1842		
One fixed bright light	60 44.					

Name and Character of Light.	Lat. N. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>BARBADOS (British)</b>						
Carlisle Bay	13 5. 59 36.3	1. On Needham Point. Bright to S. of E., red to N. of E. Reported bright all round ..... 2. Bridgetown. At the mole-head of the Carréage .....	..	34	5	1855
1. One fix. br. or red lt. 2. One fixed red lt.						
<b>SOUTH POINT</b> One rev. red lt. 1 m.	13 2.7 59 31.2	Tower 90 ft. high, with red and white bands. Does not show until it bears to westward of S.W. by W. Kept well open, it clears the Cobbler Reef .....	..	145	..	1852
<b>RAGGED POINT</b> One rev. br. lt. 2 m.	13 9.9 59 25.6	White tower, 97 ft. high, 300 yds. within cliff edge. Keep well to N.E. of light to avoid Cobbler Rocks.....	2b	213	21	1875
<b>ORINOCO RIVER LT.-V.</b>	.....	Moored in 14 ft. water 3 miles from coast & 7 miles N.N.E. from Barima Point. Lt. is not now made until the greatest dangers at the entrance of the river are passed.....	..	55	9	1875 1876
<b>GUAYANA.</b>						
<b>CAYENNE (French)</b>						
1. One fixed bright lt. 2. One fixed green lt. 3. One red light	4 56.2 52 14.8	1. Bright lt. on wood framework, N. of Fort Cépérou..... 2. Green lt. on Infantry Barracks. In one, with white light S.E. by E., leads over Aimable Rock; keep to westward ..... 3. On jetty .....	●	130	10	1863
One fixed bright light	52 32.8		●	69	8	1850
●			●	39	..	1862
<b>SALUT ISLETS</b> One fixed bright light	5 17. 52 32.8	On the summit of the hospital, Royale Islet...	●	200	18	1864
<b>Enfant Perdu Rock</b> One fixed bright light	5 2.7 52 15.9	A square iron pile tower on rock, 6 m. N. & W. of Cayenne. Shown betw. S.E. & S. & W. by S. & S., & also betw. N.E. & N. & W. by N. & N.	●	61	9	1864
<b>MARONI RIVER</b>	5 42.5 53 56.3	1. (Dutch.) Tower, 70 ft. high, on W. side of entrance ..... 2. (French.) White tower, 70 ft. high, on E. side of entrance .....	4a	75	13	1871
1. One bright fixed lt. 2. One bright fixed lt.			4a	75	13	1871
<b>Surinam Lightvessel</b> One fixed red light	6 1. 55 16.2	(Dutch.) In 14 ft. water, 8½ miles N.W. from Bram's Point. Red ball at masthead .....	●	25	8	1858 1862
<b>Berbice Lightvessel</b> One bright fixed light	6 29.2 57 23.8	(British.) Painted red; in 22 ft. water, 9 miles N.E. by N. from St. Andrew's Point. White flag, with red ball in centre, by day. Pilot sloop near .....	●	30	10	1850 1868
<b>Demerara Lightvessel</b> One bright fixed light	6 53.5 58 4.5	(British.) Painted red, one mast, in 19 feet N.N.E. & E. from lt.-ho., and 2 cables N. of "Antigua" wreck .....	●	30	10	1844 1875
<b>DEMERARA RIVER</b> One br. rev. lt., 1 min.	6 49.3 58 11.5	Octagonal tower, 100 ft. high, red and white vertical stripes, on E. side of entrance .....	4b	103	16	1829 1864

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>TIERRA FIRME.</b>						
Carupano	10 40.2	A tower on the hill in front of the town .....	...	...	4	1865
One bright fixed light	63 18.					
Cumana	.....	From tower on Custom-house .....	...	...	5	1877
One fixed bright light						
LOS ROQUES	11 58.3	On N.E. hill, 150 ft. high, of El Roque. Ap- peared as fixed lt. in Dec. 1876. Apparatus out of order .....	3b	208	15	1875
Rev. br. lt. ev. min.	66 38.5					
Puerto Cabello	10 30.	Square tower on Brava Point; red and bright flashes .....	..	79	14	1864
One revol. lt., 40 secs.	68 0.					
BUEN AYRE	12 2.2	Dutch.] Tower, 75 ft. high, striped red and white vertically, on Lacre Point, S. point of the island .....	●	85	12	....
One fixed bright light	68 22.5					
Little Curacao Island	11 58.	Dutch.] On E. side of the island .....	●	62	10	1850
One fixed br light	68 44.					
Great Curacao Island	12 6.2	Dutch.] St. Ann Harbour, on Rif Fort .....	..	...	..	1850
One fixed bright light	68 55.2					
Cumarebo Bay	11 30.	Uncertain light, 5 miles S.W. by W. & W. from Manzanilla Point .....	..	49	6	1874
69 25.						
Oruba Island	.....	A fixed bright harbour lt. is shown at Puerto Cabello .....	..	...	4	1876
Maracaibo	10 58.	Stone tower, 30 ft. high, building on Zaparo Island .....	..	...	..	....
Building	71 40.0					
Rio de la Hacha	11 33.	New Granada.] On the church. Apparatus re- ported as destroyed, and no light shown ...	..	69	6	1857
72 59.						
SANTA MARTA	11 15.5	Lighthouse on the summit of the Morro .....	..	228	24	1870
One bright fixed light	74 15.7					
PORT SAVANILLA	11 0.3	New Granada.] On a white tower on Nisperal Point. Guide to the anchorage to W. & S. of it. Does not show N. of N.W. & N. ....	5b	98	16	1872
One rev. br. lt., 2 min.	74 57.7					1875
Limon, or Navy Bay	9 23.8	New Granada.] Open frame, white, on N.W. part of Manzanillo Island, at Colon, or Aspinwall .....	..	60	10	1852
One fixed bright light	79 53.					
Cape Honduras	16 1.	On the cape, or Point Castilla, Truxillo Bay. Lighth. destroyed. Temporary lt. shown	..	...	4	....
86 3.2						
BOATAN ISLAND	.....	Shown between W.S.W. and E.S.E. Bearing N.E. by N. leads into Coxen Road .....	..	90	14	1875
One fixed bright light						
HALF-MOON CAY	17 12.3	British.] White iron tower, 100 ft. high, on S.E. point .....	●	88	18	1848
One fixed bright light	87 32.4					
Bokel Cay	17 8.8	Hung horizontally on a yard. Guide to Half- moon Channel .....	a	63	7	1868
One red, one bright lt.	87 56.4					
Belize	17 19.6	British.] Two on S. side, on English Cay. One	6a	95	3	1846
Three fixed bright lts.	88 4.	on Custom-house flagstaff .....				1863
Manger Cay	17 37.2	In one iron framework tower, 57 ft. high, on	4a	53	13	1846
Three bright fixed lts.	87 45.7	the Cay, one of the Turneff cays, 1½ mile within N. end of reef; facing to the N.E. and S.W., northern approach to Belize .....		49	13	1868
<b>MEXICO.</b>						
Progresso	21 18.	On roof of Custom-house, near the pier-head, at Progresso (Tuxula), N. coast of Yucatan	..	..	6	1874
One bright fixed light	89 33.					
Sisal	21 10.	Mexican.] Tower, 56 feet high, on the castle. Doubtful lt., Sisal not being port of entry...	..	60	10	1852
One fixed bright light	90 3.					
Campeche	19 50.	Mexican.] On church tower, in S.W. part of the town. (Uncertain) .....	..	95	14	1864
One bright fixed light	90 33.					

Name and Character of Light.	Lat. N. Long. W. a. /	Description, &c. (Bearings by compass from the light.)				Year established.
			Description of Apparatus	Height above H. W.	Visible in Miles.	
<b>XICALANGO ISLAND</b> One br. rev. lt., $\frac{1}{2}$ min.	18 37.8 9° 54.8	Mexican.] Round red and white tower, on W. side of entrance to Laguna de Terminos.....	2b	100	14	1866
<b>Goatzaacalco River</b> One fixed bright light	18 12. 94 17.	Mexican.] On old look-out tower, $\frac{1}{2}$ a mile from the beach, on W. side of the entrance	..	..	12	1860 1869
<b>VERA CRUZ</b> 1. One rev. br. lt. 45 s. 2. One br. fix. & flash. lt.	19 11.5 96 8.9	1. White lt.-ho., 60 ft. high, on W. part of S. Juan de Ulloa Fort..... 2. Tower, painted blue and white stripes, on old convent of San Francisco, $\frac{1}{2}$ cables S.S.W. & W. from old lt. in the castle of San Juan de Ulloa. Flashes every minute.....	.. 4c	80 102	15 15	... 1872
<b>Tampico</b> One fixed bright light	22 16.7 97 47.	Mexican.] Tower on North point of entrance. Said to be visible 7 or 8 miles.....	..	..	..	1865

Name and Character of Light.	Lat. S. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>SOUTH AMERICA.</b>						
<b>BRASIL.</b>						
<b>PARA' RIVER LT.-VES.</b> One revolving bright lt.	0 25.4 47 55.	Iron ship; one mast. In 15 fathoms, about $\frac{1}{2}$ mile N. of the Braganza Shoal. Lt. eclipsed 5 seconds every 5 minutes. Pos. uncertain	•	30   8   1868		
<b>PARA'</b> One revolving br. lt. 2 m.	0 34. 47 17.1	White tower on Atalaia Point .....	..	17   1852		
<b>ITACOLOMI</b> One revolving lt., 2 m.	2 10. 44 24.	Square tower, 75 feet high, on the point. Flashes red and bright alternately .....	..	147   15   ....		
<b>Alcantara Point</b> One fixed light	2 25. 44 22.	Guide for the anchorage before Alcantara.....	..	..   ..   1860		
<b>MARANHAM</b> One fixed bright light	2 29.5 44 18.	San Luis, on San Marcos Fort .....	1a	..   10   1829		
<b>SANTA ANNA</b> One rev. br. lt., $\frac{1}{2}$ min.	2 16.5 43 38.4	Square white tower, 80 ft. high, on E. part of the island .....	1b	70   14   1861		
<b>PARANAHYBA RIVER</b> One bright fixed light	2 50. 41 44.	On Point Pedra do Sal, near the Barra Velha entrance, N. coast of Brasil .....	4a	..   10   1874		
<b>Gonzalo River Lt.-Vessel</b> One fixed light	3 24. 39 2.5	Off the entrance.....	..	30   ..   1868		
<b>CIARA</b> One rev. br. lt., $\frac{1}{2}$ min.	3 42.1 38 27.5	New lighthouse, 50 ft. high, on site of former tower, on Point Macoripe .....	4b	85   13   1847 1872		
<b>Aracati</b>	4 23. 37 43.	Fixed light reported on Massaio Point .....	..	..   ..   ....		
<b>Rio Grande do Norte</b> One fixed bright light	5 45. 35 13.2	Round tower on fortress of Santos Reis Magos .....	..	43   12   1860		
<b>PARAHIBA</b> One br. rev. lt., 1 min.	6 56.5 34 49.	On Pedra Seca Rocks, on Cabedello Bar, entr. of Parnahiba River, $\frac{1}{2}$ mile from Point Matto .....	..	52   12   1874		
<b>Olinda Point</b> One intermittent wh. lt.	8 0.8 34 50.5	On Montenegro Fort.....	4b	62   10   1872		
<b>PERNAMBUCO</b> One rev. br. & red lt. 1 m.	8 3.7 34 51.7	On the reef, 50 yds. from Piso Fort. Flashes twice bright, and once red, alternately .....	..	..   22   1824		
<b>MACEIO</b> One fixed and flash. lt.	9 39.3 35 40.	West part of mountain, 1 mile from the anchorage. Fixed lt., with flash every 2 min. Also small red lt. on the pier .....	..	208   22   1856		
<b>SAO FRANCISCO RIVER</b> One bright fixed light	10 27. 36 21.5	On N. point of river .....	..	69   11   1867		
<b>Cotinguiba Bar</b> One fixed light	11 1. 36 59.5	On the watch-tower; lt. red to E., white to S.E., green to S. Anchorage with red lt. in sight. Pilots near mooring buoy, S.E. $\frac{1}{2}$ S., 4 miles from lighthouse .....	..	115   7   1863		
<b>Itapuan Point</b> One bright fixed light	12 58. 38 21.	A round iron tower on Piraboca Rock, 1 cable off Itapuan Point, N.E. of Bahia .....	..	68   14   1873		
<b>BAHIA, or San Salvador</b> 1. One rev. lt., $1\frac{1}{2}$ min. 2. One fixed bright lt. 3. One fixed red light	13 0.9 38 31.7	1. On Fort San Antonio. Flashes twice bright, and once red alternately .....	..	140   18   1823		
		2. On Fort Sta. Maria .....	6a	..   6   1876		
		3. On Fort do Mar.....	..	..   ..   1864		
<b>MORRO DE S. PAOLA</b> One rev. br. lt., 1 min.	13 22.6 38 51.8	White tower, 80 ft. high, on the Morro .....	..	276   20   1854		
<b>ABROLHOS ISLANDS</b> One rev. br. lt., 1 min.	17 57.7 38 41.5	Round iron tower, 51 ft. high, on highest point of Santa Barbara Island .....	1b	189   17   1861		
<b>ESPIRITU SANTO</b> One bright fixed light	20 19. 40 13.	On Santa Luzia Hill, on S. side of the bay.....	4a	66   12   1871		

Name and Character of Light.	Lat. S. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CAPE FRIO</b> One rev. br. Lt., 1 $\frac{1}{2}$ m.	23 0.7 41 57.1	Stone tower, 53 ft. high, on Focinho de Cabo, $\frac{1}{4}$ of a mile S. of old lighthouse. Shown eastward from N.E. to W. ....	●	522	25	1862
<b>RAZA ISLAND</b> One revol. Lt., 2 $\frac{1}{2}$ min.	23 5.7 43 8.3	White square tower, 50 ft. high, on the island. Flashes 2 br. & 1 red alternately .....	..	315	14	1828
<b>RIO DE JANEIRO</b> 1. One fixed bright lt. 2. One red light	22 56.6 43 7.3	1. Bright Lt., on Fort Sta. Cruz, on E. side of entrance .. 2. Red Lt. on Calhabouco Point occasionally, for steamers.....	..	..	6	1839 1866
<b>SANTOS</b> One fixed bright light	24 2. 46 13.	White tower, 40 ft. high, on Moela Island.....	1a	334	24	1831
<b>PARANAGUA BAY</b> 1. One fixed bright lt. 2. One fixed bright lt.	25 32.7 48 18.3	1. Iron tower, 69 ft. high, on Conxas Point, I. do Mel, in South Channel .. 2. On fort, Ille do Mel; shown betw. S.E. & S. by E. and N. to N.N.W. & W. ....	..	262 47	20 6	1872 1875
<b>ST. CATHERINE</b> One rev. br. Lt., 1 min.	27 49.5 48 32.7	Circular tower, on Pta. dos Naufragados, S. bar of St. Catherine .....	●	149	18	1861
Anhatomirim Islet One bright fixed lt.	27 25.5 48 34.3	On Fort Santa Cruz, N. entrance to Santa Catharina Strait.....	..	..	4	1873
<b>RIO GRANDE DO SUL</b> One rev. br. Lt., 2 min.	32 7.3 52 4.4	On N. point of entrance, above a mile from the extremity .....	●	96	14	1851
<b>Lagoa dos Patos</b>						
Surregonesa One bright light	31 44. 52 9.7	On the island. Lts. for the channels between Rio Grande and Porto Alegre .....	..	..	..	1860
Estreito	.....	Bright light on the point .....	..	..	..	1860
Bojura One fixed light	31 35. 51 38.	On the point .....	..	..	..	1860
Marca	.....	One fixed light on the cape.....	..	..	..	1860
Christovao-Pereyra	31 26. 51 24.	One fixed light on the point .....	..	..	..	1860
Barba Negra	.....	One fixed light on the islet.....	..	..	..	1860
<b>RIO DE LA PLATA</b>						
<b>S. JOSE' IGNACIO PT.</b> One fixed bright lt.	34 51. 54 40.	Lighthouse 27 miles S.W. of Cape Santa Maria	2a	103	15	1877
<b>CAPE SANTA MARIA</b> One br. rev. Lt. 1 m.	34 40.5 54 9.	A round tower of masonry, 125 ft. high.....	1b	132	18	1874
<b>MALDONADO BAY</b> One fixed bright lt.	34 58.2 54 57.4	Banda Oriental.] Tower, 90 ft. high, on East point. (Intended to be shifted to Lobos Island) .....	a	152	10	1860
<b>FLORES ISLAND</b> One rev. br. Lt., 1 m.	34 56.9 55 52.4	Banda Oriental.] White tower, 65 ft. high. (Bad light) .....	..	104	12	1833
Lobos Island Proposed	35 1.4 54 50.4	Proposed to be reinstated; removed from Maldonado light.....	..	..	..	....
English Bank Lt.-Ves. One fixed bright lt.	35 6. 55 52.6	Banda Oriental.] Painted red, with three masts. In 7 fathoms, on tail of the North part of the bank. Position uncertain.....	..	..	10	1857

Name and Character of Light.	Lat. S. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above h. w.	Visible in Miles.	Year established.
<b>RIO DE LA PLATA--(continued).</b>						
<b>PUNTA BRAVA</b> One fixed bright lt.	34 55.7 56 9.0	White lt.-ho. 1 cable within the point, 2 miles East of Monte Video .....	..	69	10	1876
<b>MONTE VIDEO</b> 1. One fix. & flash lt. 2. One fix. bright lt.	34 53.0 56 14.9	1. Banda Oriental.] Brown tower, 25 ft. high, on summit of the mount, W. side of harbour. Flash every 3 minutes .. 2. Clock face on cathedral S. tower. Lighted in order to enable vessels to anchor by cross bearings at night .....	..	486	25	1852
<b>Pancla Shoal Lt.-Ves.</b> One bright fixed lt.	34 54.7 56 26.2	A cable's length N.N.W. $\frac{1}{4}$ W. from the Pancla Reef .....	..	147	..	1864
<b>Ortis Bank Lightvessel</b> One fixed bright lt.	.....	Buenos Ayrean.] Painted red, two masts, red ball at main. Moored in 3 $\frac{1}{2}$ fms., 11 miles N.E. from Indio Point. Red and white flag when pilots are on board. The position of this vessel is not to be relied on .....	●	30	10	1849 1857
<b>Chico Bank Lightvessel</b> One fixed bright lt.	34 45.8 57 30.2	Banda Oriental.] Painted red, two masts. In 5 fathoms, 11 $\frac{1}{2}$ miles N.E. $\frac{1}{4}$ N. from Atalaya Point .....	..	20	9	1867
<b>COLONIA</b> 1. One rev. br. lt. 3 m. 2. One fixed red lt.	34 28.2 57 49.7	(Banda Oriental.) 1. Brick tower, on S.W. angle of Plaza .. 2. Pilot-station S.S.W. 6 miles from Farallon Islet. Blue flag with white square during day ..	..	110	10	1855
<b>Farallon Island</b> One fixed bright lt.	.....	Shown from lighthouse, 98 ft. high .....	..	..	12	1876
<b>BUENOS AYRES</b> 1. One fix. bright lt. 2. One fix. bright lt.	34 35.5 58 16.5	1. From Guardship, in 2 $\frac{1}{2}$ fms., in outer Roads. Three masts .. 2. On Custom-house tower ..	..	20	7	1857
<b>Martin Garcia</b> One bright fixed lt.	.....	.....	..	..	..	....
<b>CAPE VIRGINS</b>	52 18.6 68 17.5	Proposed light ..	..	..	..	....
<b>FALKLAND ISLANDS</b> One fixed bright light	51 40.7 57 41.8	(British.) Tower, 60 ft. high, white and red bands, on Cape Pembroke. Shown seaward from N.W. $\frac{1}{4}$ N. to S.W. $\frac{1}{4}$ W. ....	●	110	14	1856
<b>PATAGONIA.</b>						
<b>MAGELLAN STRAIT</b>						
<b>Sandy Point</b> One fixed bright lt. One fixed red light	53 9.7 70 53.6	The lts. were shown as follows:—A br. fix. lt. from round tower of block-house, betw. S. by E. $\frac{1}{4}$ E., through E., to N. 2 $^{\circ}$ E., & a fix. red lt. from white cupola, 20 ft. W. of battery flagstaff. Br. lt. bearing N. of W. $\frac{1}{4}$ N. clears shoals to northward. Anchor with red & br. lts. in line, in front 10 to 5 fms. (The block-house was destroyed by fire in Nov. 1877, & the red lt. only is now shown). Green lt. on mole-head	..	74	10	1868
				69	3	1877

Name and Character of Light.	Lat. S. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W. Miles.	Visible in Miles.	Year established.
<b>CHILE.</b>						
<b>CHILOE ISLAND</b>	41 46.7 73 52.5	White tower, 32 ft. high, on N. pt., San Carlos de Ancud, or Punta Corona. Flash ev. 2 min. From telegraph on upper part of Aguy Point, Ancud, Chili. Guide to anchorage.....	4c	197	12	1859
One fix. & flash. br. lt.			..	..	2	1874
One bright fixed light						
<b>GALERA POINT</b>	40 1.5 73 44.2	White tower of brick, 62 ft. high. Lt. shows a flash every minute .....	2c	180	20	1876
One fix. & flash. br. lt.						
<b>VALDIVIA</b>	39 52.2 73 23.7	White wooden tower, 8 ft. high; on Castle Niebla Point, on E. side, within entrance ...	4a	121	12	1866
One fix. lt.						
<b>CONCEPCION BAY</b>	36 36.3 73 2.8	White tower, 36 ft. high, on N. point of Quiriquina Island, at Talcahuano .....	4b	213	15	1869
One br. rev. lt. 40 secs						
<b>VALPARAISO</b>	33 1.5 71 38.5	White tower, 61 ft. high, on Angeles, or Playa Ancha Pt. Flash ev. 3 min. Obscured by land southward of S. W. A coloured flashing lt. is also shown at the landing-place ...	4d	190	16	1857
One fix. & flash. br. lt.						
<b>COQUIMBO</b>	29 56.9 71 20.7	1. White tower, 25 ft. high, on Tortuga Point, S. point of Coquimbo Bay. Shown seaward from S. W. $\frac{1}{2}$ W. to N.E. $\frac{1}{2}$ E..... 2. Shown from iron column, on Custom-house mole, as a guide for landing .....	4c	106	12	1868
1. One br. fl. lt., 20 s.						
2. Rev. red & yellow lt.						
<b>Huasca</b>	28 28. 71 19.	A fixed light is shown when the mail steamer is expected .....	..	..	..	....
<b>PORT CALDERA</b>	27 3. 70 53.	White tower, 42 ft. high. Fix. lt., with a flash every 80 secs., on W. entr. pt. Lt. at pier-head for steamers coaling .....	4c	123	15	1868
One fixed and flash. lt.						
<b>PERU.</b>						
<b>QUIQUE</b>	.....	A lt.-ho. is building, of iron, 73 ft. high, on Iquique Id. The lt. will be a fixed & flashing light every 30 secs.....	..	..	18	....
<b>CALLAO</b>	12 4. 77 16.5	Octagonal white tower, 60 ft. high, on North point of Lorenzo Island. Shown seaward, but hidden by the island from N.W. $\frac{1}{2}$ N. to W. by N. $\frac{1}{2}$ N.....	..	980	12	1857
One fixed bright light						
<b>GUAYAQUIL RIVER</b>						
<b>AMORTAJADA ID.</b>	3 10.7 80 24.5	White tower on summit of Amortajada, or Clara Island. Flashes every $\frac{1}{2}$ minute .....	3c	256	24	1873
One br. fix. & flash. lt.						
<b>Arena Point</b>	3 1.9 80 15.6	Square tower on S. side of Puna Island, at entrance of Guayaquil River. Lt. visible 16 secs., obscured 44 secs. in each minute .....	4a	59	12	1873
One red revolving lt.						
<b>Espanola Point</b>	2 47.5 79 54.5	On summit of Espanola Point, Puna Island..	..	131	9	1874
One fixed bright lt.						
<b>Point Mandinga</b>	2 44.5 79 52.8	On Point Mandinga, E. end of Puna Island, and $\frac{1}{2}$ mile East of the town of Puna.....	..	108	10	1873
One bright fixed lt.						
<b>Manta Bay</b>	0 56.7 80 43.	At North end of the village .....	..	..	9	1873
One bright fixed light						
<b>ECUADOR.</b>						
<b>Esmeralda River</b>	.....	Coquito Point light discontinued, pending removal to Mount Coquito (1875).....	..	..	..	....
<b>COSTA RICA.</b>						
<b>Panama</b>	8 57. 79 31.	1. On the railway wharf .....	..	..	..	1870
1. One red fixed light		2. On the Custom-house, St. José.....	..	..	7	....
2. One fixed light						
<b>Nicoya Gulf</b>	9 58.6 84 45.8	Punta Arenas .....	3a	65	10	1856
One fixed bright light						
<b>PORT REALEJO</b>	12 27.9 87 7.8	White lt.-house, 33 ft. high, on Cardon Head, N.E. pt. of Cardon Island. Centre of channel is $\frac{1}{2}$ a cable N. of lighthouse.....	..	64	13	1876
One fixed bright light						
<b>Port La Union</b>	.....	Gulf of Fonseca. At inner part of landing wharf .....	..	33	8	1876
One fixed bright light						
<b>Libertad</b>	13 30.7 89 15.5	On W. corner of Custom-house; hidden by a building from S. by E. to S.S.E. $\frac{1}{2}$ E. ....	..	..	6	1872
One fixed bright light						
<b>Acajutla</b>	13 36.7 89 43.7	At end of iron mole at Acajutla, or Sonsonate Roads. Lt. shows white over anchorage, red to southward, and green to northward .....	..	..	7	1872
One fixed light						

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>CALIFORNIA (United States).</b>						
<b>SAN DIEGO</b>	32 40.2	Dark grey tower, 45 ft. high, near Point Loma, W. side of entrance.....	3a   492   20   1855			
One fixed bright lt.	117 14.4					
Point Firmin	33 42.	Sq. buff col. tower, 80 ft. high. Flashes alternately red and bright, at intervals of 10 secs.	4b   151   19   1874			
One flash. red & br. lt.	118 18.					
Santa Barbara	34 23.6	Gray tower, 44 ft. high, on bluff, 2 miles S. W. of landing-place .....	4a   180   12   1856			
One fixed bright light	119 43.1					
Hueneme Point	34 9.	In Sta. Barbara Channel. Tower, buff colour, 54 ft. high. Fixed lt. 1 min., then 6 flashes in next minute .....	4c   50   12   1874			
One fixed & flashing bright light	119 13.					
<b>POINT CONCEPCION</b>	34 26.8	White tower, 50 ft. high, near the pitch of the point. Steam Fog-whistle 8 secs. in ev. min.	1b   250   23   1855			
One rev. br. lt., $\frac{1}{2}$ min.	120 28.5					
<b>PIEDRAS BLANCAS</b>	35 40.	Conical brick tower, 105 ft. high, painted white. Lt. shows a flash ev. 15 secs. Piedras Blancas rock bears S. W. from the light.....	1c   168   19   1875			
One fix. & flash. br. lt.	121 16.					
<b>MONTEREY</b>	36 38.	White tower, 45 ft. high, on S. side of Point Pinos .....	3a   91   13   1854			
One fixed bright light	121 55.					
Santa Cruz	36 57.	Tower, 50 ft. high, on Point Sta. Cruz, at entrance of harbour. Coming from N. is not seen till it bears E. $\frac{1}{2}$ N. ....	5a   67   14   1870			
One bright fixed light	122 0.5					
Ano Nuevo Point	37 6.7	On S.W. side of the island. A fog-whistle is sounded 12 secs. in every minute .....	..   ..   ..   1872			
	122 19.9					
<b>PIGEON POINT</b>	37 11.	White tower, 100 ft high, with red-topped lantern. A fog-whistle sounded twice in every minute, at intervals of 7 and 45 secs. About 25 miles to the northward a steam fog-signal is established on Montara Point.....	1c   150   18   1871			
One fl. br. lt. ev. 10 s.	122 23.6					
<b>FARALLON</b>	37 41.8	White tower, 44 ft. high, on summit of S.E. islet .....	1b   360   26   1855			
One rev. br. lt., 1 min.	123 0.					
<b>SAN FRANCISCO</b>						
<b>BONITA POINT</b>	37 48.8	New lt.-tower, $\frac{1}{2}$ mile nearer point, 22 ft. high, painted white. Old lt.-tower white, as day beacon. Fog-trumpet, 270 ft. N.E. of new tower; blast of 4 secs. in ev. 39 secs. Whistle-buoy in 13 $\frac{1}{4}$ fms. S.W. $\frac{7}{8}$ miles from lt.-ho.	2a   138   18   1855			
One fixed bright lt.	122 30.8					1877
Lobos Point	37 46.9	Proposed flashing light on S. point of entrance	2d   ..   ..   ....			
<i>Proposed</i>	122 29.5					
<b>Fort, South Point</b>	37 48.5	White tower, 27 ft. high, on N.W. bastion. Lt. br. 1 min., followed by 4 red flashes during next minute. Fog-bell every 10 seconds ...	5a   83   16   1855			
One fix. lt., red flash.	122 28.6					
<b>Alcatras Island</b>	37 49.6	White iron tower, 60 ft. high. Fog-bell.	3a   166   14   1854			
One fixed bright lt.	122 24.4					
<b>Yerba Buena Island</b>	37 48.3	Light-brown lt.-ho., 21 ft. high, on S.E. end of Id. Steam fog-whistle 4 secs. ev. 16 secs....	●   93   15   1875			
One fixed bright lt.	122 21.7					
<b>San Pablo Point</b>	37 57.8	Tower, 47 ft. high, on W. end of Brother Id., San Pablo Strait. Steam fog-whistle $\frac{1}{2}$ min.	4b   68   14   1874			
One br. flash. lt. 30 s.	122 25.					
<b>Mare Island</b>	38 4.4	On S.E. end of island, entrance of Karquines Strait. Fog-bell.....	4a   72   14   1873			
One bright fixed lt.	122 14.3					
<b>POINT REYES</b>	37 59.7	White iron tower, 52 ft. high, on steep slope of bluff. A sparkling light. Steam fog-whistle, one blast every minute .....	1c   271   23   1873			
One br. flash. lt., 5 secs.	123 0.2					
<b>POINT ARENA</b>	38 57.	White brick tower, 115 ft. high, near the extremity of the point. Steam Fog-whistle	1a   155   21   1870			
One bright fixed light	123 45.					
<b>CAPE MENDOCINO</b>	40 26.3	White iron tower, 20 ft. high, on W. extreme. Flash every 30 secs.	1c   423   27   1868			
One bright flashing lt.	124 24.2					
<b>Humboldt Harbour</b>	40 46.	White tower, 45 ft. high, on N. side of entrance. Steam fog-whistle. Whistle-buoy in 15 fms. outside outer bar, W. $\frac{1}{4}$ S. from lighthouse...	4a   53   13   1856			
One fixed bright light	124 13.					

Name and Character of Light.	Lat. N. Long. W. °   °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Trinidad Head One fix. & red flash. lt.	41 3. 124 9.	A brick tower, 34 ft. high, on the head. Fixed bright lt. with red flash of 5 secs. ev. min.	4c	195	17	1871
Crescent City One fixed & flash. br. lt.	41 44.6 124 11.4	Stone tower, 56 ft. high, on outer end of island, which forms the S. and W. sides of the harbour. Flash every 1½ minute .....	4c	80	14	1856
CAPE BLANCO One bright fixed light	42 50.1 124 32.5	White brick tower, 65 ft. high, 200 yds. from extreme of cape .....	1a	255	22	1870
CAPE GREGORY, or Point Arago One fixed & flash. lt.	43 20.6 124 22.3	White iron tower, 36 ft. high, on a small island at W. extreme. Flash every 2 min.	4c	75	15	1860
CAPE FOULWEATHER One bright fixed light	44 45. 124 5.	White brick tower on the cape .....	1a	147	18	1873
COLUMBIA RIVER						
Adams Point One flashing light	46 12. 123 58.	Square wooden buff coloured tower, 57 ft. high, on S. side of mouth of Columbia River. Flashes alternately red and bright, at intervals of 10 secs. Steam fog-whistle .....	4b	95	15	1875
Cape Hancock One fixed bright lt.	46 16.5 124 3.2	White tower, 50 ft. high, on slope of cape, N. side of entr. of Columbia River. Fog-bell ev. 10 secs. Whistle-buoy in 1½ fms. S. by E. ½ E., ½ miles from lighthouse .....	1a	230	22	1856
St. Helen's Bar Two fixed red lights	.....	Range lts. for newly dredged channel over St. Helen's Bar. Shown from tripods near town of St. Helen's. Front tripod 20 ft. high, rear 40 ft. .....	..	..	..	1877
SHOALWATER BAY One br. fix. & flash. lt.	46 44.2 124 4.4	White tower, 50 ft. high, on Toke Point, N. extreme of the bay. Flash every 2 min....	4c	80	14	1856
CAPE FLATTERY One fixed bright light	48 23.3 124 43.8	Juan de Fuca Strait. White tower, 80 feet high, on Tatsoah Island, ½ a mile N.W. of cape. Steam Fog-whistle .....	1a	162	20	1857
Ediz Hook, or False Ness One bright fixed light	48 8.7 123 23.7	Square white building, 50 ft. high, on the Hook, Port Angeles .....	5a	42	11	1866
NEW DUNGENESS One fixed bright light	48 11.7 123 7.5	Juan de Fuca Strait. Tower, 104 ft. high, upper half black, lower white, on N. end of sand spit. Fog-whistle twice a minute.....	3a	100	14	1857
BLUNT, or SMITH ID. One rev. br. lt., ½ min.	48 19.2 122 50.8	Juan de Fuca Strait. White tower, 48 feet high, on highest part of island .....	4b	90	15	1858
Admiralty Head One fixed bright light	48 9.4 122 40.1	Square white building, 55 ft. high, on Red Bluff, Whidbey Island, at entrance of Admiralty Inlet .....	4a	119	17	1861
BRITISH COLUMBIA.						
VANCOUVER ISLAND						
CAPE BEALE One br. rev. lt., ½ m	48 47.5 125 12.8	Tower, 45 ft. high, on Cape Beale, S.E. entr. to Barclay Sound, Vancouver Island .....	..	164	19	1874
RACE ISLANDS One flash. br. lt. 10s.	48 17.5 123 32.2	Stone tower, with five black and white bands, on the rocks. A 5-ft. reef lies 3 or 4 cables to S.E. by E. Fog Bell .....	2c	..	..	1861
Victoria Harbour One fixed blue light	48 25.3 123 24.	White tower, 30 ft. high, on Buenos Island, W. side of entrance .....	..	44	6	1876
Esquimalt One fix. red or br. lt.	48 25.6 123 27.2	White iron tower, 57 ft. high, on Fisgard Id., S. point. Lt. shows br. from S. & E. to S.E. by E. & E.; thence red to N. & W.; thence br. to N.W. & W.; the rest masked .....	4a	65	..	1860
FRASER RIVER LT.-V. One bright fixed light	49 3.5 123 17.3	Painted red. In 10 fms., ½ miles S. by W. from Garry Point. Two masts; red ball at main. Fog Bell .....	●	54	11	1866
Nanaimo Harbour One fixed bright light	49 12.8 123 48.7	White tower, 50 ft. high, on entrance island, S. point of entrance .....	●	65	14	1876
Atkinson Point Rev. br. lt. ev. min.	49 19.7 123 16.	Wooden t. wer, 55 ft. high, on N. side of entr. to Burrard Inlet. Do not bring it to bear W. of N. to clear Sturgeon Bank off Fraser Riv.	●	119	14	1875

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
<b>PACIFIC OCEAN.</b>						
<b>HAWAII, or SANDWICH ISLANDS</b>						
Hilo Harbour	19 45.5	On Pankas Point, Hawaii Island. Uncertain light. Small red light shown on pier.....	..   136   10   1869			
One bright fixed lt.	155 5.					
Kawaihae	20 3.	Anchorage with light bearing E.N.E. Hawaii Island .....	..   50   10   1869			
One bright fixed lt.	155 45.					
Kealakeakua	19 28.	Hawaii Island. On Cook Point.....	..   50   ..   ....			
One fixed bright lt.	155 55.					
<b>MAUI or MOWEE ISLAND</b>	20 52.	Port Lahaina (Lahaina) .....	..   ..   6   1868			
One bright fixed lt.	156 35.					
<b>HONOLULU</b>	21 18.1	1. Inner edge of W. reef. Shown to South from West to S.E. by E.....	4a   26   9   1869			
1. One br. fixed lt.	157 51.1	2. Near custom-house. To enter, ring the two lights in one. Oahu Island .....	..   28   5   1869			
2. One green light						
<b>SOCIETY ISLANDS</b>	Lat. S.					
<b>TAHITI</b>	17 29.8	New lighthouse. A square white tower, 75 feet high, on Point Venus. Light shown seaward from W. by N. to N.E. by E. $\frac{1}{2}$ E.	3a   82   15   1866			
One bright fixed lt.	149 29.3					1868
<b>PAPIOTE</b>	.....	One on the corner of L'Embuscade Battery; the other on a hill-side, 1,520 yds. to S.S.E. In one, lead through channel. (Uncertain.) A small red beacon lt. is shown on Sosotol Reef .....	..   ..   ..   ....			
Two red lights						
<b>FIJI ISLANDS</b>	Long. E.					
Ovalau Island, Levuka	17 40.8	Two white beacons, E. $\frac{1}{2}$ N. and W. $\frac{1}{2}$ S., 73 yds. apart, each with a red diamond. Inner one on a hill behind the town; the lower one near the Mission-house. In one, they lead through the South entrance passage .....	..   ..   10   1871			
Two fix. beacon lts.	178 49.					
Upper bright, lower red light						

**NEW CALEDONIA.**

<b>PORT DE FRANCE, or NOUMEA</b>	22 28.7 166 27.1	Round iron tower, 157 ft. high, red and white bands, on Amédée Islet, 2 miles within the edge of the reef of the Bulari Passage, New Caledonia .....	1a   164   20   1868
One bright fixed light			

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1879



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